THE BUILDER
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VOL. CXLII. MARCH 18, 1932. No. 4650.

Hardwick Manor, Bury St. Edmunds: Entrance Front.

MESSRS. KERSEY, GALE AND SPOONER, Architects.

MEETINGS

FRIDAY, *March* 18.

London Society. Mr. Percy Good on "Illuminating London." 5 p.m.

Architecture Club. Discussion on "The House I Want." At 34, Bedford-square, W.C.1. 7.30 p.m.

FRIDAY AND SATURDAY, *March* 18 *and* 19.

Royal Sanitary Institute. Friday: Mr. S. G. Stanton on "Remodelling and Reconstruction of Drainage in Southampton." At the South-Western Hotel, Southampton. 4.45 p.m. Saturday: Mr. M. G. J. McHaffie on "Development of Southampton Docks." At the Pier Pavilion, Southampton. 9.45 a.m.

SATURDAY, *March* 19.

Incorporated British Institute of Certified Carpenters. Annual Dinner. At the Carpenters' Hall, Throgmorton-avenue, E.C.2. 7 p.m.

Institution of Municipal and County Engineers. Yorkshire District Meeting. At the Council Offices, Shipley. 2 p.m.

MONDAY, *March* 21.

Royal Institute of British Architects. Professor J. W. Mackail on "A Layman's Thoughts on Architecture." 8 p.m.

Institution of Mechanical Engineers. Mr. C. Hulme on "Modern Methods of Structural Steel Production." 6.45 p.m.

TUESDAY, *March* 22.

Institution of Electrical Engineers (*Scottish Centre*). Dr. T. Settle on "Commercial Cooking by Electricity." At Edinburgh. 7 p.m.

Institution of Civil Engineers. Mr. Raymond Carpmael on "Cementation in the Severn Tunnel." 6 p.m.

WEDNESDAY, *March* 23.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "Modern Architecture." 6 p.m.

Electric Lamp Manufacturers' Association. Lecture on "Light and Architecture." At 15, Savoy-street, W.C.2.

Institution of Structural Engineers (*Lancashire and Cheshire Branch*). Mr. H. A. Whittaker on "Aspects of the Mechanical Solution of Influence Diagrams." At the Liverpool Engineering Society, Liverpool. 7 p.m.

Institute of Landscape Architects. Mr. R. V. Giffard Woolley on "Theory in Garden Making." At the Royal Horticultural Hall, Greycoat-street, Westminster, S.W.1. 3.30 p.m.

Nottingham, Derby and Lincoln Architectural Society. Annual Dinner. At the "Black Boy" Hotel, Nottingham. 7.45 p.m.

THURSDAY, *March* 24.

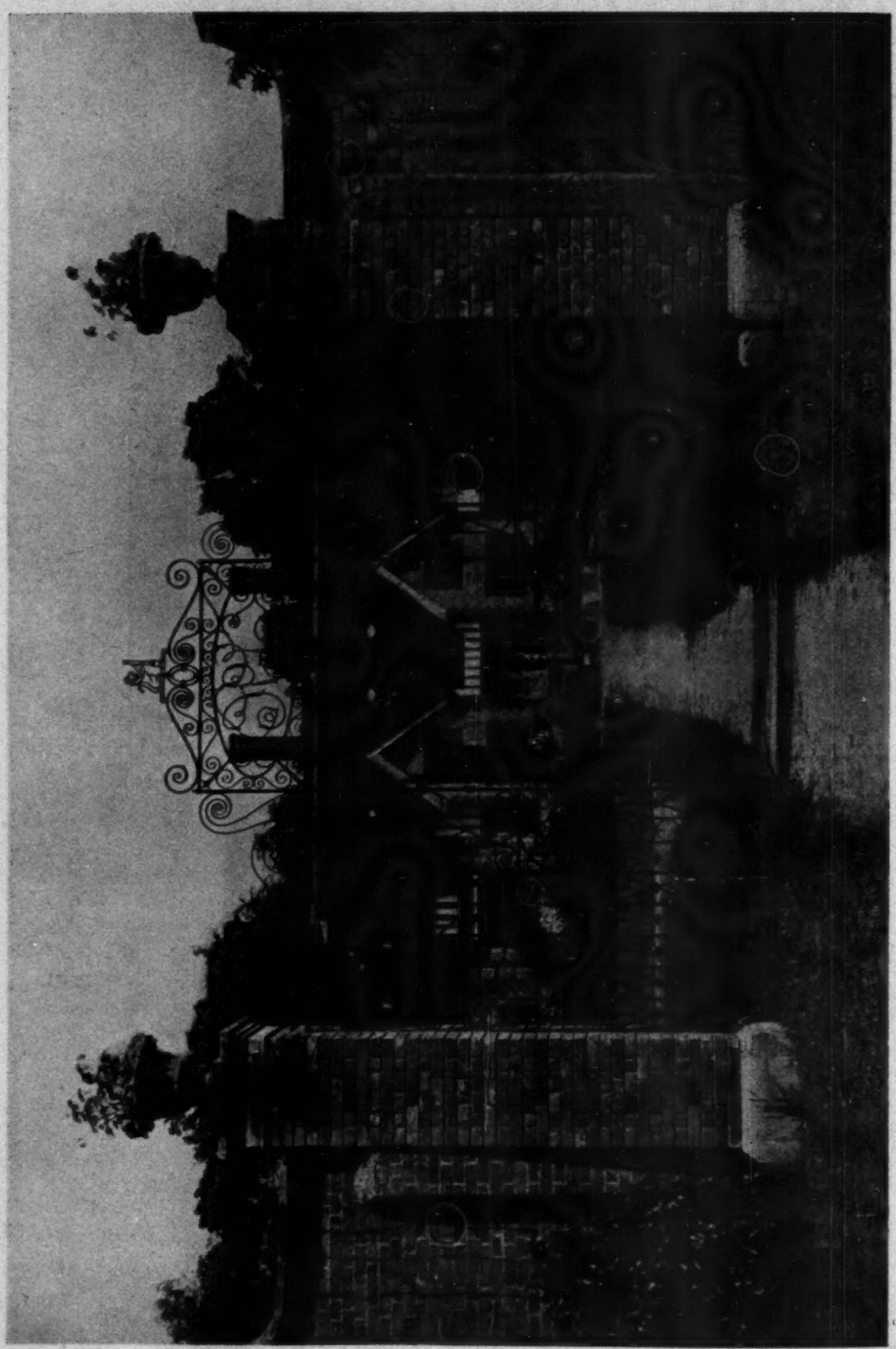
Institution of Structural Engineers (*Yorkshire Branch*). Mr. A. G. Rotinoff on "Pile Driving by the West Rotinoff System."

THURSDAY, *March* 31.

Institution of Structural Engineers. Mr. A. H. S. Waters on "Modern Constructional Practice in Sewerage and Sewage Disposal Works." 6.30 p.m.

FRIDAY, *April* 1.

Incorporated Association of Architects and Surveyors. Mr Leslie Maddock on "The New Town and Country Planning Bill."



Hardwick Manor, Bury St. Edmunds: Garden Front from outside Walled Garden.

MESSRS. KERSEY, GALE AND SPOONER, Architects.

THE BUILDING RESEARCH BOARD

WE have referred from time to time to the valuable work by the Building Research Board in the interests of architects and builders and others connected with the building industry, and from the monthly reports issued by the Board and published in our columns the character of this work will have been appreciated. We now have before us the Report of the Board for the year 1930, from which a better knowledge can be obtained of all that Dr. R. E. Stradling, the Director of the Research Station, and his able staff are doing for the industry, on behalf of which more than 1,000 inquiries from architects, builders and contractors were answered by the Research Station during last year. In the past those engaged in the industry solved any difficulties that arose in the use of materials in the best way they could, though with increasing difficulty as building conditions changed (and how numerous these difficulties have become our own Inquiry columns afford some indication); but now, advice can be sought at the Research Station in the solution of various problems as they arise, and from the records and machinery available at the Station, useful advice or help can be obtained.

We are glad to note that the Board have not relaxed in their attempts to enlarge the amount of co-operative work with industry. Primarily, they report, the difficulty is one of knowledge and education, for as soon as the sections of the industry realise the potential value of co-operative work, the initiation comes from them. "It is becoming more and more appreciated that there is reasonable prospect of success even with the most difficult problems if the experience and information of the individual firms concerned can be co-ordinated and thereafter linked with the technique and ability of the laboratory investigators."

In this connection, two new co-operative researches have been undertaken in conjunction with the Cast Concrete Products Association and the Greystone Lime Burners' Association, and close collaboration has been developed between the Building Research Station and the Institution of Heating and Ventilating Engineers with regard to work on heating and ventilating problems. Moreover, the National Federation of Building Trades Employers are continuing their contribution to the general work of the Station, and the National Federation of Clay Industries are continuing to contribute to researches in hand on the weathering of clay products. The London Brick Company and Forders have renewed their contribution to general research on efflorescence on bricks. The Institute of Builders' scheme for the maintenance of studentships at the Building Research Station is in operation and the Royal Institute of British Architects has recently offered a contribution towards the general expenses of the Station.

The preparation of standard specifications for building materials is receiving special attention by the Board in conjunction with the British Standards Institution. "The prime function of standard specifications is to provide a standard, as high as economic considerations will allow, which will force inferior material into disuse. . . . The specifications will provide a medium whereby the results of laboratory investigation and full scale practice can be readily translated into general industrial use."

Much of the scientific and highly technical work described in the Report is directed towards the development of reliable tests on which such specifications can be based. For example, the conclusion has been reached that the methods at present used for testing the strength of rapid-hardening cement give no reliable indication of the quality of the concrete made from the cement. In view of the importance of the early strength of concrete in modern practice, an investigation has been undertaken in collaboration with the British Standards Institution with the object of finding a simple test for cement which will be a true guide to the strength developed by the concrete. A large amount of other work on cement and reinforced concrete has been carried out. A new laboratory is being erected to house this work. A special feature of the laboratory is the plant that is being installed to enable air conditions, as regards temperature and humidity, to be controlled within narrow limits.

Great interest, say the Board, has been manifested during the course of the year in regard to building regulations and by-laws. They, as a body, are not concerned with the drafting of such regulations or with their revision. These are matters for the various statutory bodies. They have, however, every desire to promote economy and efficiency in the industry and are prepared to give all technical assistance, within their powers, to those bodies and associations that wish to take advantage of the information and research facilities the Board can offer.

Dr. Stradling's account of the various investigations at the Station is of great interest and value, and reveals the wide field of research which is being carried out in a most methodical and thorough manner. The first part of the Report deals most usefully with general research and special investigations as to materials—their weathering, structure and strength—and the efficiency of buildings; and the second part with the inquiries and minor investigations of the Station. Many of these inquiries related to the penetration of damp through walls. We are inclined to agree with the Director that, "in the light of the knowledge at present available, it does not seem possible to guarantee that a solid brick or masonry wall will exclude damp under all conditions of exposure likely to be experienced in Great Britain," but his further statement that "the owner of a house with a cavity wall seems to be in a far better position," appears to be qualified by the further statement that "no instance has been recorded of the failure of a properly constructed cavity wall to exclude damp," for much depends on the qualifying word.

A number of inquiries sought advice on the acoustic design of buildings. The Report points out that the methods of treating a reverberant building by stretching wires across it has been shown to be quite valueless, and as to the transmission of sound through various types of structures it is now possible to lay down general principles which can be applied to reduce the transmission of sound through floors and partitions. The most useful guide in placing homogeneous materials in some order of merit in this respect is their weight. Where the weight of material necessary to obtain the sound insulation required is excessive, a considerable reduction of noise can be obtained by the use of composite structures with air spaces between the component parts.

As in previous years, a large number of failure of plaster ceilings were examined. "In many instances there can be no doubt," we read, "that the work had been executed in a conscientious manner by experienced operatives and the trouble could only be ascribed to some defect in the materials employed." The existence of such defects is attributed largely to the absence of any formal specification for plastering materials. "The conventional specifications are valueless for all practical purposes as the proportions are not rigidly defined, and it is quite common to see limes specified which are quite unsuitable for the case, situation in which they are to be used, and which, in any case, could only be obtained with considerable difficulty."

The Report, price 2s. 6d. net, is issued by the Department of Scientific and Industrial Research, Westminster, S.W.1, and deals with other matters of interest which our readers will be well advised to study.

NOTES

New R.I.B.A. Headquarters.

A WRITER in the *Daily Telegraph* states that "architects are rather doubtful as to whether their proposed headquarters in Portland-place will be erected as soon as was originally intended," and goes on to say that "the creeping paralysis which has overtaken the architectural profession has created many problems. There is some question whether it may not be wiser to continue in the present headquarters." We are informed from an official source that "any question of postponing the scheme has never been discussed. As far as is known, a start will be made upon at least the first section of the new building when the competition has been decided." We learn from the same source that the competition drawings are to be displayed, probably, in "Thames House," Millbank.

Waterloo Bridge.

IT has been made quite clear that Sir Giles Scott and Sir Edwin Lutyens each signed a letter of protest at the Royal Academy against the destruction of Waterloo Bridge, and they have confirmed this. They did not, however, join in the expressed opinion that Waterloo Bridge could be widened without detriment. It is all the more significant that Sir Giles has expressed an opinion against the destruction of the bridge, when it is remembered that if a new bridge is erected he will be the architect for it. But we have the definite opinions of able architects that Waterloo Bridge could be widened to the slight extent required for four lines of traffic, and competent engineers assure us that the bridge can be reconditioned at a comparatively moderate cost. Those who saw the drawings by Sir Reginald Blomfield and the model by Mr. Maurice Webb can surely be under no doubt as to the effect which would result from the slight widening suggested. We cannot understand the talk that such an alteration would be vandalism.

The Charm of the River Views.

WHAT has been to many a continual source of charm is brought before us in the following words by Sir Herbert Baker in *The Times*. He says the relation of Waterloo Bridge to Somerset House, of which much has rightly been said, cannot perhaps be so generally appreciated by the public as there is as yet no embankment across the river from which it could be best seen. "But there is no more majestic sight in London," he continues, "than the great dome of St. Paul's moving across the arches of Waterloo Bridge as one goes along the Embankment from Charing Cross to the City. A higher view of these two in harmony with each other will be obtained some day, it should not matter to us how far hence, when a Charing Cross road bridge is built. Arches and dome seem to have been designed in a mutual harmony such as could never be created in a new bridge with wider spans and flatter arches, which, as Sir Reginald Blomfield rightly says, must be constructed of steel or concrete, not of stone. Rome and Paris can boast no such sight, as neither the dome of St. Peter's nor of the Pantheon can be seen down the Tiber or the Seine from or over their bridges."

The Fifth Avenue Hospital, New York.
MESSRS. YORK & SAWYER, Architects.
(*See page* 510.)

Private Amenities.

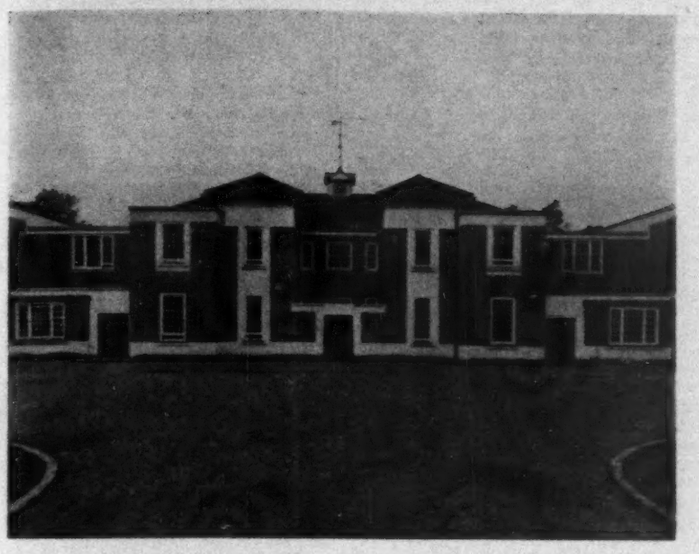
STRONG opposition is in evidence against the building of a new pier at Hove, for as Sir Cecil Levita writes: "At a moment when Parliament is considering a Town Planning Bill designed to enable local authorities to arrange, in the public interest, a more rightful use of sites, a glaring example of inability to distinguish between public and private rights is afforded by the inaction of Hove Corporation. This is not a case of public improvements obtained at private expense, but of speculators being permitted to override public interests. Our rights to the valuable amenities attaching to our private property sites should be defended at all costs."

The Irish "A.A."

THE Architectural Association of Ireland continues to be very much alive. The Tuesday lectures were particularly successful and well attended, and the Architectural School from University College, Dublin, is now old enough to add past graduates to its membership. Socially the "A.A." has continued the policy that good fellowship is good for architecture, and many Dubliners are now familiar with the fine Georgian rooms of 8, Merrion-square, where exhibitions and dances have recently been followed by the annual plays. These performances are home-grown throughout and, like the efforts of the London "A.A.," have become so firmly established in popularity that a third night is required to meet the increased attendance. This year a curtain-raiser and a three-act play were performed with exceptional success. We wish the Association every prosperity; architecture needs all the corporate stimulation it can arouse, if it is to draw the public into active co-operation with its aims and activities.

"Creeping Paralysis" in the Industry.

THE misinterpretation on the part of local authorities of the Ministry of Health circular for September last, which has resulted in the cutting down of so much municipal work, was referred to by Mr. P. Malcolm Stewart at the recent ordinary general meeting of the London Brick Company and Forders, Ltd. "The issue of that circular," he said, "caused the suspension of building operations by public bodies to an alarming extent. Further, it had its repercussions on private building enterprise also, causing those prepared to engage in such building to hesitate and to wonder whether it would not be unpatriotic to proceed. The condition of the private building trade was not quite so healthy as it had been and offered a favourable breeding ground for any germ that came along. There is a curious psychology in such matters—a small cause will start creeping paralysis. Thus it will be seen that at a period when the demand for building was hardly so brisk as it had been it was hit hard by external influences over which it had no control. These are the conditions under which we are working."



Entrance Elevation of Excited Patients' Unit (known as Tyson House).

The New Bethlem Royal Hospital.

Messrs. John A. Cheston and C. Ernest Elcock, FF.R.I.B.A., Associated Architects.

The Remedy.

"Is there a remedy?" Mr. Stewart continued. "The primary requirement is to know where we stand. Is expenditure on building construction generally against the public interest? This would seem an incredible proposition seeing that in the main new buildings represent invested national wealth producing an increased national annual income. In present circumstances expenditure on some classes of buildings may be deemed unwise. For instance, an old town hall may be utilised a little longer and the building of the grand new one postponed. On the other hand, if the extra efficiency and economy effected through a concentration of staff and saving of rents secures an adequate return, the building of the new town hall will surely be a wise expenditure. Having regard to the unexpected effect produced by the issue of the Minister of Health's circular, surely it is not too much to expect that the Government should make a definite pronouncement which would assist local authorities to differentiate between essential and unessential building, encourage them to proceed where justified, and thus alleviate the grave unemployment in the ranks of the operatives in the building and allied industries."

Town Planning in Ireland.

After the treatment that the Town Planning Bill has received in committee in England, it is encouraging to note that Ireland has at last issued the terms of the Town Planning Bill worked out and introduced provisionally by the late Government. It follows in all major particulars the agreed Bill that was carried three years ago by the Senate, backed by the Royal Institute of the Architects of Ireland. It is idle now to bemoan the lost years between the two measures; let us hope that the new Government will back this proposal, which should elicit the support of all parties; it has already received the endorsement of the department that will have to make it effective. The powers are adequate if they are effectively used, and their existence should serve as propaganda as well as an active purpose, setting an example that should have a possible influence over here.

Town Planning in Prussia.

In view of the Town and Country Planning Bill, now in Committee, there is a good deal of interest in the Planning Bill introduced by the Prussian Ministry for Public Welfare. Prussia started town planning in 1875, but shortly before the War ambitious local authorities made such definite and detailed plans for the future that many have had to be scrapped and much money has therefore been wasted. They made their plans on the assumption that their population was going to increase, and it is now found that the plans no longer suit the altered circumstances. Accordingly, authorities in Prussia have been advised to plan with a wider outlook, without laying down hard and fast rules for an indefinite time, and without incurring unreasonable expense. The German Bill, like the Town and Country Planning Bill in this country, is having a rough passage. On the one side, local authorities protest that it is restricting local self-government too much. On the other hand, representatives of property owners regard some of the provisions as leading to Socialistic confiscation. They look, for example, upon reservation of a piece of land as a permanent open space as expropriation, and demand compensation.

Art in the Life of Mankind.

Two little books on "Art in the Life of Mankind," series Nos. III and IV, indicate with much clearness the character of Greek and Roman art respectively.* Probably the definite comparison between Greek and Roman art is very helpful to a clear understanding of both. By well-chosen photographs of fine examples of these ancient arts and many slight sketches, the character of each is very well expressed. One can hardly speak too highly of these two volumes, which owe their being to Mr. Allen W. Seaby, Professor of Fine Art at the University of Reading. What he has aimed to do has been done very well, and almost any student of fine art would find pleasure in them, alike for their illustrations, their critical understanding, and their literary qualities.

* London: B. T. Batsford, Ltd., 5s. net each volume.

Hardwick Manor, Bury St. Edmunds: The Hall.

Messrs. Kerbey, Gale and Spooner, Architects.

GENERAL NEWS

THE EASTER HOLIDAYS.

Owing to the Easter Holidays, "The Builder" for next week will be published on Thursday, March 24. Copy for publication in that issue should reach this office by first post Tuesday morning.

Professional Announcements.

Messrs. Sidney Williams, L.R.I.B.A., and Vivian S. Williams, architects, surveyors and valuers, announce that in future their practice will be carried on at Westgate House, Westgate-street, Cardiff. Telephone No.: 2312.

Mr. A. B. Grayson, A.R.I.B.A., has commenced practice at 6, York-street-chambers, Jersey, C.I., and will be glad to receive trade catalogues, samples, etc.

Mr. S. Hodgson Doyle, A.R.I.B.A., A.M.I.Struct.E., chartered architect and surveyor, announces that as from March 31 his address will be Town Hall-chambers, Victoria-square, Leeds. Telephone number: 26902.

Mr. A. Alban H. Scott, F.R.I.B.A., has moved to 30, Bouverie-street, E.C.4. Telephone number: Central 7145.

Rugby Football Match.

A Rugby football match took place recently at Cardiff between the students at the R.W.A. School of Architecture, Bristol, and the Welsh School of Architecture, Cardiff, resulting in a win for the Welshmen by 12 points to 6.

R.I.B.A. Prizes and Studentships.

Now issued is the R.I.B.A. Prizes and Studentships pamphlet for 1932-1933. The pamphlet contains full information upon the various prizes and studentships, together with, where applicable, the detailed programmes for the competitions. Copies of the pamphlet are obtainable at the R.I.B.A., price 1s., exclusive of postage.

Westminster Bridge Parapets.

Steps are being taken to renew the parapets of Westminster Bridge, with the exception of a short stretch which was renewed some time ago while one of the arches was being repaired. It is understood that the renewals are considered necessary owing to the development of a number of minor cracks in the cast-iron parts of the parapets.

Architects' Estates.

Mr. Edward Hewetson, F.R.I.B.A. (76), of Bournemouth, left £2,492.

Mr. Goodwin Simpson Packer, of Southport, architect (so far as at present can be ascertained), left £5,815 (net personalty £2,366).

Mr. Frederick Batchelor, F.R.I.B.A., of Mentone, France (net personalty £8,983), left £9,089.

Newcastle-on-Tyne Municipal Buildings.

Despite financial stringency, Newcastle Central Estates and Markets Committee hold to their opinion that the quality of accommodation available for the staff in the municipal buildings is not to be tolerated indefinitely by any self-respecting authority, and at a recent meeting the committee decided to recommend that an independent architect be engaged to survey the buildings and to suggest how the working accommodation may be improved and extended. The committee have sponsored a scheme for replacing the central section of the municipal buildings, including the Corn Exchange and the old concert hall, by a five-story structure which would meet staff accommodation needs for the next 25 years. The project was estimated to cost £70,000.

Building Societies and National Housing.

The suggestion that building societies should take over the provision of houses under the national housing schemes was put forward by Sir Enoch Hill, Chairman of the National Association of Building Societies, at a banquet in London on March 9. Last year's deficit on housing for London County alone was estimated, said Sir Enoch, at £1,032,444. Of that sum £732,000 odd would fall on the national taxpayer, £300,000 odd on the local ratepayer. The Exchequer housing grants for 1932 were about £12,750,000, to which nearly £3,000,000 from local rates would be added. "An enormous demand," he continued, "exists for houses, small but sanitary, and with all essential modern facilities, to cost about £400. The building industry is ready to build them but cannot build unless it can sell. On the other hand are thousands of quite worthy people who are ready and anxious for such houses, but who have little or no available capital. If the Government would support people of good character and in receipt of regular wages by giving a guarantee to building societies, the capital value represented by regular earnings could be mobilised, and people such as the State is anxious to help could be put in the way of getting houses by building society assistance. Ultimately, by means of instalments little in excess of rent, they could become unencumbered owners of their own houses."

ARCHITECTS' REGISTRATION COUNCIL

By the courtesy of the President of the Council of the Royal Academy, the first meeting of the Architects' Registration Council of the United Kingdom was held in the Assembly Room, Burlington House, on Friday, the 11th inst. The Home Secretary, Sir Herbert Samuel, G.C.B., G.B.E., welcomed the Council, dwelling on the importance of its work to the public and the profession in ensuring a high standard of architectural practice.

The Council is composed of 42 members, representing architectural societies, departments of State, and kindred institutions. The Council will duly appoint an Admission Committee, a Board of Architectural Education, and proceed to set up a Register, which will be open on and after June 30, 1932. The names of members of the Council are set out below. Major Harry Barnes, F.R.I.B.A., F.S.I., F.R. Stat. Soc., M.T.P.I., was elected chairman of the Council, and Mr. Sydney Tatchell, Vice-President, R.I.B.A., was elected vice-chairman. Until further notice all communications should be addressed to the Acting Secretary, 18, Abingdon-street, S.W.1.

Constitution of the Council.

Twelve members appointed by the Council of the Royal Institute of British Architects.—Major Harry Barnes, F.R.I.B.A.; Mr. L. Sylvester Sullivan, F.R.I.B.A.; Mr. Sydney Tatchell, F.R.I.B.A.; Mr. Sydney D. Kitson, M.A.CANTAB., F.S.A., F.R.I.B.A.; Mr. E. Stanley Hall, M.A.OXON., F.R.I.B.A.; Mr. Henry V. Ashley, F.R.I.B.A.; Mr. Michael T. Waterhouse, M.C., A.R.I.B.A.; Mr. W. H. Ansell, M.C., F.R.I.B.A.; Mr. H. M. Fletcher, M.A. CANTAB., F.R.I.B.A.; Mr. J. Alan Slater, M.A. CANTAB., F.R.I.B.A.; Mr. John Watson, A.R.S.A., F.R.I.B.A.; Mr. Percy E. Thomas, O.B.E., F.R.I.B.A.

Three members appointed by the Council of the Incorporated Association of Architects and Surveyors.—Major Sir R. I. Tasker, T.D., D.L., J.P., F.I.A.A.; Major F. G. Sainsbury, J.P., F.I.A.A., L.R.I.B.A., M.I.STRUCT.E.; Major G. B. J. Athoe, F.R.S.A., F.I.A.A., A.I.STRUCT.E.

Two members appointed by the Council of the Faculty of Architects and Surveyors.—Sir Charles C. Allom, F.R.S.A., F.F.A.S.; Mr. W. G. Percy, L.R.I.B.A., F.F.A.S.

Three members appointed by the Council of the Architectural Association (London).—Mr. A. B. Knapp-Fisher, F.R.I.B.A.; Mr. J. R. Leathart, F.R.I.B.A.; Mr. F. R. Yerbury, HON.A.R.I.B.A.

One member appointed by the Council of the Association of Architects, Surveyors and Technical Assistants.—Mr. L. A. F. Ireland, L.R.I.B.A.

Three members representing the Provincial Associations.—Mr. J. T. Halliday, F.R.I.B.A.; Major T. C. Howitt, D.S.O., F.R.I.B.A.; Mr. R. S. Reid, F.R.I.B.A.

Five members appointed by the Secretary of State representing Unattached Architects.—Mr. Clifford A. Aish, Mr. A. Randall Wells, Mr. H. W. Crickmay, Mr. J. N. Comper, Mr. W. H. Mackenzie.

One member appointed by the Council of the Ulster Society of Architects.—Mr. Kendrick Edwards, F.R.I.B.A.

One member appointed by the President of the Board of Education.—Mr. W. C. Eaton.

One member appointed by the Minister of Health.—Mr. E. H. Rhodes, O.B.E.

One member appointed by the Commissioners of Works.—Sir Richard J. Allison, C.B.E., F.R.I.B.A.

One member appointed by the Department of Health for Scotland.—Mr. John Wilson, F.R.S.EDIN., F.R.I.B.A.

One member appointed by the Governor of Northern Ireland.—Major G. A. Harris, C.B.E., D.S.O.

One member appointed by the Council of the Chartered Surveyors' Institution.—Mr. Dendy Watney, F.S.I., L.R.I.B.A.

One member appointed by the Council of the Institution of Structural Engineers.—Mr. R. H. Harry Stanger, F.C.S., A.M.INST.C.E.

One member appointed by the Council of the Institution of Municipal and County Engineers.—Mr. J. L. Redfern, A.R.I.B.A.

One member appointed by the Council of the Society of Engineers.—Mr. C. H. J. Clayton.

One member appointed by the Council of the Institute of Builders.—Mr. P. J. Spencer, M.A.

One member appointed by the Council of the National Federation of Building Trades Employers.—Mr. J. H. Barker, A.I.O.B.

One member appointed by the Council of the National Federation of Building Trades Operatives.—Mr. Richard Coppock.

A Committee of Ways and Means was appointed as follows.—Mr. Clifford A. Aish, Sir Charles Allom, F.R.S.A., F.F.A.S.; Mr. W. H. Ansell, M.C., F.R.I.B.A.; Mr. H. V. Ashley, F.R.I.B.A.; Mr. W. C. Eaton; Mr. H. M. Fletcher, M.A.CANTAB., F.R.I.B.A.; Mr. E. Stanley Hall, M.A.OXON., F.R.I.B.A.; Mr. L. A. F. Ireland, L.R.I.B.A.; Mr. J. R. Leathart, F.R.I.B.A.; Major F. G. Sainsbury, J.P., F.I.A.A., L.R.I.B.A., M.I.STRUCT.E.; Mr. J. Alan Slater, M.A.CANTAB., F.R.I.B.A.; Mr. L. Sylvester Sullivan, F.R.I.B.A.; Mr. Michael Waterhouse, M.C., A.R.I.B.A.; Mr. A. Randall Wells; Mr. F. R. Yerbury, HON.A.R.I.B.A.

Ex-Officio.—Major Harry Barnes, F.R.I.B.A., and Mr. Sydney Tatchell, V.P.R.I.B.A.

COMPETITION NEWS

Lay-out of Pidgley Estate, Dawlish.

The following notice has been issued by the R.I.B.A.:—Members of the R.I.B.A. and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

COMPETITIONS OPEN.

R.I.B.A. new premises. Assessors, Messrs. R. Atkinson, Charles Holden, H. V. Lanchester, P. S. Worthington, and Sir Giles Scott. Premiums, £500 and £750 among runners-up.....	Particulars published in "Builder."	Sending in date. April 19
For designs for new Town Hall and Municipal Buildings, for Walthamstow T.C. Mr. H. Austen Hall, F.R.I.B.A., assessor. Premiums, £500, £300, £200 and £100. Conditions from Mr. F. C. Garner, Clerk, E.17. Dep. £3 3s.	Sept. 18 Sept. 4	March 31
Designs for Bank Facade in granite, organised by Cornish Quarry Masters' Association. Open to "A.A." members only. Messrs. A. B. Knapp-Fisher, C. Lovett Gill and V. O. Rees, FF.R.I.B.A., assessors. Prize £50. Details from Sec., "A.A.," 34-6, Bedford-square, W.C.	Jan. 1	March 31

CORRESPONDENCE

The Registration Act and Unattached Architects.

SIR,—Might I be allowed to suggest that Major G. B. J. Athoe's zeal on behalf of "unattached" architects has blinded his judgment? If the election he refers to took place at a properly convened meeting and the election of the three Fellows was carried through on constitutional lines, I hope Mr. J. T. Halliday, Mr. T. C. Howitt and Mr. R. S. Reid will not stand down as requested by Major Athoe.

Logic and psychology would suggest that these men, holding the honourable position which they do, will act with conscientiousness and fairness, and, being free from any personal interest in this matter, will be able to make very much stronger representation of the case for "unattached" architects than one of their own number. In any case, any such "unattached" architect may any day find himself inside the doors of the Institute, provided his work justifies his election.

To suggest that the Institute would "count heads twice" is rather a reflection on its knowledge of arithmetic and good faith. The doors of the Institute can never be closed (examination or no examination) to a Wren, Jenny-Wren, Rennie or Jenny-Rennie.

WILLIAM DAVIDSON.

Rail *v.* Road Transport.

SIR,—I read with interest the letter which you publish [*The Builder*, March 11] from Lord Strathspey on the handicap to British industry involved by increasing the burdens on motor owners at the present time. A further point occurs to me. The railways have told us that their goods traffic is down by £6,000,000 a year because of road competition. They have not told us how much they have gained in the conveyance by rail of material for the roads paid for, as Lord Strathspey truly points out, by motor owners; or in the further gain from carrying other material to new building estates which would never have sprung into being but for road developments. Such estates must have meant an immense increase in railway passengers, too; for it is true in general to say that the railways only link up communities when these communities have been made by roads.

(MAJOR) R. D. BARRETT.

London, W.1.

Shrewsbury Bridge.

SIR,—In view of the various suggestions being put forward as to the fate of Waterloo Bridge, London, it may be interesting to recall what was done at Shrewsbury between the years 1921 and 1927. The first bridge was built in Norman times and stood till 1769, when a second, enlarging it, was thrown across the river at a cost of £16,000. It was 400 ft. in length and had seven semi-circular arches—the central arch 55 ft. in width and the width between the balustrades 23½ ft. The architect was John Gwynn.

Increasing traffic demands on the bridge necessitated modernisation, but the bridge now standing, opened by the Prince of Wales in October, 1927, is, so far as appearance goes, practically a replica of the original. Its principal features are made up of the original material. The choice lay between building a new bridge or adapting the old one to meet modern needs, and, in order appreciably to reduce the ascent and descent, it was necessary to take down the previous bridge completely and to rebuild it stone by stone. It is now a worthy compromise between the contending desires of those who admired and those who used the bridge. The intention of the engineer for the scheme—Mr. A. W. Ward, borough surveyor of Shrewsbury—and his consultants, was to replace every sound stone. His intention proved possible, with the exception of the balustrades, which on being dismantled, proved to be badly decayed.

The rise from the extremities to the crown of the bridge was originally 10 ft.; it is now 5 ft. To bring about this change 5 ft. of masonry was omitted, at the water level, when the middle arch was rebuilt, and what had been the third course of stones became the first or lowest course, so that the height of this arch is 5 ft. less than was formerly the case, and instead of being semi-circular, it is now a segment of a circle—just as it appeared in the old days when 5 ft. of flood water was running through it. The second and sixth and the third and fifth arches were reduced in height in a lesser degree, in direct proportion to their distance from the ends of the bridge. The end arches remain semi-circular; they were not lowered.

Upon the completion of a temporary bridge of pitch pine trestles and steel superstructure, erected on the southerly side of the work, sufficient to carry all traffic—vehicular and pedestrian—the dismantling of the bridge was begun in 1925, and the original stone was stacked until required for the new bridge. The new bridge stands on mass concrete foundations in the clay some 20 ft. below the summer level of the river. The old bridge was built of Grinshill stone, and the stone required for the new portions of the widened arches and for the new balustrade was also obtained from the Grinshill Quarries, some 8 miles from the site. The arches were strengthened considerably by the addition of a layer of concrete over the back of the masonry, and they are now capable of carrying very heavy traffic. The new bridge is 50 ft. in width between the parapets, 30 ft. being carriageway, together with two 10 ft. footways, as compared with the original width of 23½ ft. between parapets and a carriageway 15½ ft. in width.

The standards for the lighting of the bridge are a new feature so far as recent generations are concerned, but are in strict accordance with what is depicted on the engraving published by the architect on completion of the second bridge in 1774. Water, lighting, electric power, gas, telephone and telegraphic services lie under the footways. The approaches to the bridge have been widened, and shop premises rebuilt so as to accord with the width of the bridge. The estimated cost of the works was round about £85,000. These few details may be of interest to those who favour the retention and enlargement of Waterloo Bridge.

G. B. J. ATHOE, Secretary,
Incorporated Association of Architects and Surveyors.

Choosing the Roof.

SIR,—I am rather surprised that so few people realise that slates can be laid on a roof at a flatter pitch than any other material. This saves a few pounds in capital cost, even in the case of the smallest dwelling. However, the low maintenance cost that arises from the use of British slates is probably the most important factor.

ECONOMIST.

Courtauld Institute of Art.

Mr. Samuel Courtauld is placing his residence, 20, Portman-square, in the hands of trustees for the remaining 50 years of his lease, so that the house may become the temporary headquarters of the Courtauld Institute of Art. The house is an example of Robert Adam's work, and the scheme will constitute a memorial to the late Mrs. Courtauld. The institute will be available for the reception of students in October.

Proposed Amusement Centre, Bournemouth.

In connection with the proposed erection of a £100,000 swimming pool, shops, cafés and club premises in the Bath-road, Bournemouth, the Minister of Health has allowed the appeal of the promoting syndicate against the Corporation's decision not to sanction the plans of the proposed building. The council's refusal to sanction the plan was on the ground that the inclusion of shops in the scheme would be harmful to the amenities of the district.

"THE BUILDER" DEBATE

XLIX.—OPENING OF TENDERS.

SIR,—I have read "Negative's" reply with mixed feelings, but predominant is that of dismay. With vivid memories of some of the architects of a time when it was customary to open tenders in the presence of the builders, I had thought to draw from the representative of the modern school some better reason for the change than one amounting to a confession of weakness. After telling us that he has many and incontrovertible reasons, "Negative" confines himself to stating only one of them, and that is that his client should be given time to recover from the blow of finding out that his architect knows little or nothing of costs. The cat is out of the bag, and all may now see its colour. But the brick is still left in the bag, and all might still be well could we but reunite the pair and complete the consignment.

I quite agree with "Negative" that until architects again regard a knowledge of costs as being an essential part of their training, they are likely to suffer embarrassment by having to seek the client's sanction for the expenditure of further considerable sums over and above those contemplated prior to the opening of tenders. For that is what "Negative's" tearful regard for his client's local reputation amounts to. His fear is that should it be noised abroad that Mr. X has had to abandon his projected new building the reason may also be not unlikely to be made known. This is part of the price that has to be paid for the change that has come about in regard to architects' training. As a pupil in the office of an architect of good standing, the architect-to-be obtained a knowledge of practice from the business side and was thus enabled to prepare preliminary estimates containing fewer mistakes.

In opening the debate I touched but lightly on the builder's suspicion that he does not always get fair play, and I have no intention of over-emphasising this, the more unpleasant side of the subject. But even "Negative" can hardly fail to be aware that such a suspicion exists. I will put it no higher than this: An experienced builder receiving an inquiry from an architect previously unknown to him, invariably looks at the letters after his name, and is much reassured where they indicate qualifications of a definite standard.

For the rest, "Negative's" attitude to this matter provides one more instance of the changed outlook of the architects of a younger school. Formerly, the architect never forgot that his real power to get the best results for his clients lay in the builder's recognition of the fact that he would receive fair play. It was only that which enabled the architect to take to himself powers under conditions of building contract that give one man more power over another than can be found in few, if any, other forms of contract. To-day, there is a movement which seems to indicate that the architect is desirous of throwing off the umpire's coat and going to the bowling crease when the builder is batting, and of resuming the coat for the purpose of saying "Not out" when his client is batting. Many of them in regard to tendering are at their very worst. Some of them will throw a smudgy blue print and an ill-composed, badly typed specification at the builder and deem it an impertinence if asked for a list of the tenders. Needless to say, this shows them to be young and very green. The experienced builder can generally see through this disguise; he knows that the youngster is likely to improve on better acquaintance, and that the most ungainly colts may train on to something that is at least presentable.

POSITIVE.

[Correspondence on this subject is invited. —ED.]

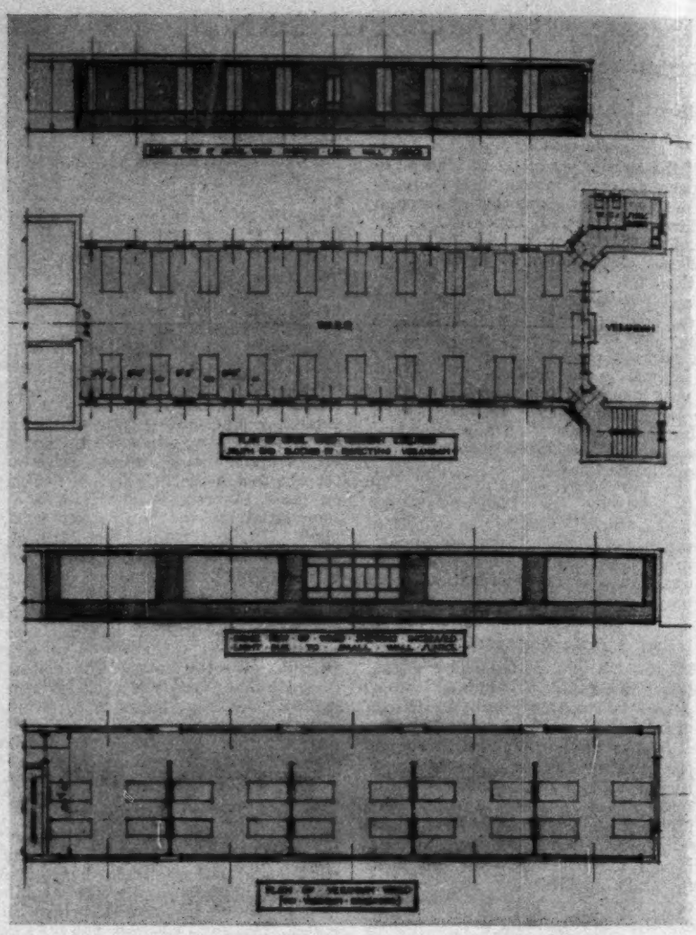
HOSPITAL PLANNING AND CONSTRUCTION

A LECTURE on "Modern Hospital Planning and Construction," in connection with the Chadwick Trust, was given by Mr. C. Ernest Elcock, F.R.I.B.A., in the R.I.B.A. Lecture Hall at 9, Conduit-street, W., last Tuesday. The lecturer stressed the very great development which was now made possible in hospital accommodation throughout the country by the passing of the 1929 Act doing away with the Boards of Guardians. Modern hospital planning, he said, was an exceedingly scientific and technical subject, and gave the very greatest scope for inventive and original ideas combined with a long vision as regards future requirements.

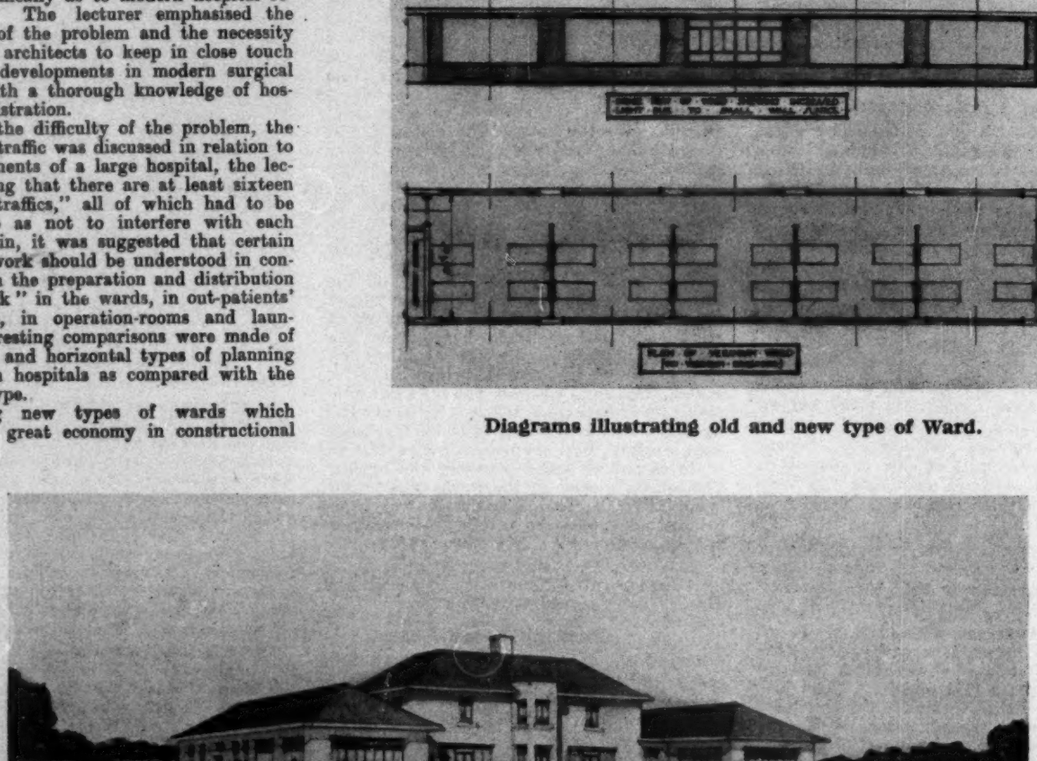
He particularly urged that the usual stereotyped hospital-ward buildings should be reconsidered in the light of modern hospital knowledge. He pointed out that a great deal of the hospital work in this country was being placed in the hands of officials, borough engineers and others who were not fully informed technically as to modern hospital requirements. The lecturer emphasised the complexity of the problem and the necessity for hospital architects to keep in close touch with rapid developments in modern surgical methods, with a thorough knowledge of hospital administration.

To show the difficulty of the problem, the question of traffic was discussed in relation to the requirements of a large hospital, the lecturer showing that there are at least sixteen different "traffics," all of which had to be arranged so as not to interfere with each other. Again, it was suggested that certain circuits of work should be understood in connection with the preparation and distribution of "footwork" in the wards, in out-patients' departments, in operation-rooms and laundries. Interesting comparisons were made of the vertical and horizontal types of planning in American hospitals as compared with the European type.

Discussing new types of wards which allowed for great economy in constructional



Diagrams illustrating old and new type of Ward.



MESSRS. ELCOCK AND SUTCLIFFE, FF.R.I.B.A., Architects.

costs, the lecturer said that in his opinion there was considerable waste of public funds in connection with the construction of many of our modern hospitals. He then gave figures showing that hospitals in London are costing £1,500 to £1,600 per bed, as against similar hospitals as complete in every detail which had been erected since the war for £800 to £1,000 per bed. Great economy, he said, must be exercised in capital outlay, whilst at the same time care must be taken that annual administrative cost was not thereby increased.

The question of the new paying patients' hospitals which are rapidly coming before the public was gone into in detail, and it was suggested that this country was on the eve of a large development of paying hospitals for the middle classes, which would revolutionise hospital treatment.

The lecture was illustrated by numerous lantern slides.

WATERLOO BRIDGE

SIR REGINALD BLOMFIELD'S ADDRESS.

In an address to the Conservative Committee of Transport last week in the House of Commons, in connection with Waterloo Bridge, Sir Reginald Blomfield, R.A., said the objections to the destruction of the bridge were not a matter only of opinion—they were based on hard facts; and it was on those facts that the issue must be decided. First, there was the obvious congestion of traffic that must result if a six-line bridge were built. Since their proposals for a Charing Cross Bridge had been rejected, the L.C.C. had assumed that no bridge would ever be built at Charing Cross, and Sir Percy Simmons stated this in terms when he met that Committee recently. The L.C.C. had also rejected the proposal for a bridge in the neighbourhood of the Temple. On that assumption they appeared to contemplate making Waterloo Bridge do the work of two bridges and argued that in doing so they showed a wise foresight for the future, 100 years hence. A hundred years hence everybody might be flying, and he would ask them: how about the next 25 years? What was going to happen to the traffic after it had left the bridges north and south? It was suggested at one time that it might be relieved by a subway down which traffic might disappear in Wellington-street and emerge somewhere in Aldwych or Kingsway. He did not know if, as a matter of fact, such a subway were possible at all, having regard to the existing tramway tunnel coming from the Embankment, but even if it were possible, this would simply disgorge traffic into Kingsway and make the crossing at High Holborn worse than ever and it would do nothing for traffic turning eastward along the Strand.

When the Advisory Committee appointed by the L.C.C. to consider a bridge at Charing Cross was sitting it was taken as an axiom that where a main thoroughfare crossed another there must be a place, with not less than 150 ft. uninterrupted kerb between the points at which the streets entered the place. If this were done at the intersection of Wellington-street and the Strand the south-west corner would have to be shaved off up to Savoy-street, the north-west corner up to half-way up Wellington-street, cutting through the Lyceum Theatre, and the greater part of Inveresk House would have to be removed, and even if this were done there still remained the necessity of a wide thoroughfare going north and of the widening of Waterloo-road going south. In the L.C.C. scheme of a six-line bridge no provision whatever was made for getting rid of the traffic.

Then there was the vitally important question of costs. He found it difficult to disentangle the various estimates and figures. The chairman of the L.C.C. Improvements Committee informed his Council that the estimated cost of removing the old bridge and constructing a new six-line bridge would be £1,295,000, and that this was only £214,000 more than the cost of reconditioning the existing bridge and widening it to take four lines of traffic. The Royal Commission on Cross-River Traffic estimated the cost of reconditioning and widening the bridge at £860,000, and that was considered by engineers to be a liberal estimate; taking that figure and adding to it £214,000, the total would appear to be not some £1,300,000, but £1,074,000, and the extra cost not £214,000, but £440,000. But, taking the estimated cost at £1,295,000, Lord Plymouth informed the House of Lords that this included a sum of £275,000 for the demolition of the existing bridge. A competent and experienced engineer had put the cost of demolition at just double this amount. Both figures must, of course, be speculative, but in view of the unusual difficulty of the work, it would be wiser to base calculations of cost on the higher rather than the lower figure. The work of demolition would be a very difficult and, in the opinion of some engineers, an extremely dangerous operation, especially to navigation, because of the risk of the arches collapsing during the process of removal.

No provision had been made in the estimate for a second temporary bridge. Yet it was certain that the present 18-ft. temporary bridge could not deal with all the cross-river traffic at this point for an indeterminate period of from six to eight years, the time estimated as necessary for the completion of the new bridge. The Government had boldly offered to take on 60 per cent. of the cost, but the taxpayer would like to know definitely what the cost would be before he put his hand in his pocket; and, quite apart from the cost of the new bridge, there loomed in the near future the inevitable cost of improving the approaches to the bridge, which must run into some millions. Sir Percy Simmons and Lord Plymouth, by way of reassuring the public, said that there would be no great difficulty in buying the land for street improvements, because they knew all about the owners. The point was not the manner of purchase, but who was going to find the money, and how many more millions were to be collected from the unhappy taxpayer.

It has been announced that the new bridge would be a stone bridge and would span the river in five arches, and also that due care would be taken of its relation to Somerset House. He had had such a bridge set out in order to see what the effect of a five-arch stone bridge would be. The total length from shore to shore was 1,100 ft. Allow 25 ft. for each of the four piers (the existing piers were 20 ft.); this left for each arch a span of 200 ft. The maximum height possible from high-water level to the soffit of the arch was 27 ft. 6 in. The result would be a stone segmental arch of 200 ft. span, with a maximum rise of about 30 ft. Such an arch in stone might stand by itself, but could not carry any considerable load, as the joints over most of the centre part would be nearly vertical. The arch would have to be secured to and carried by either a steel girder or a reinforced concrete arch at the back: an unsatisfactory form of construction which was deliberately rejected at Lambeth Bridge. Incidentally, such an arch would be very ugly and quite out of scale with Somerset House, and a good part of the navigable way would be lost, because of the flatness of the arch. The alternative, and, indeed, the only sensible form of construction for an arch of this span and limited rise was, of course, in steel; but, then, what became of Somerset House and the care for its relation to the bridge? This was not the only difficulty in the way of a satisfactory design; for instance, there was the entrance to the tram tunnel. An attempt was made, by speakers in the House of Lords, to ride off the point by suggesting that there were as good fish in the sea as ever came out of it. Of course there were, and given a free site there were plenty of engineers and architects who could produce a satisfactory bridge. But this was not a free site. The design of the bridge was conditioned by Somerset House.

What was the alternative? A very simple one—namely, to adopt the recommendations of the Royal Commission on Cross-River Traffic to recondition the bridge and widen it to take four lines of traffic. With regard to the reconditioning, engineers of first-rate authority on such work said that this could be done without difficulty and without danger at a cost of from £725,000 to £770,000, and, what was perhaps even more convincing, two first-rate contractors, who were used to work of this magnitude, were prepared to do the work, one for £613,500 and the other for £676,000. The work could be done piece by piece without obstructing the traffic in the river or on the Embankment, and it would not be necessary to construct a second temporary bridge at all, as the bridge would not be closed to traffic. Traffic authorities were convinced that the four lines would be ample for all the traffic that the approaches could take. This would avoid the necessity of altering the approaches, and the field would be left clear for that new bridge that must be made either near Charing Cross or the Temple.

It had been suggested that the widening of the bridge 3 ft. 6 in. on each side or by corbelling out, which was all that was necessary, would injure its appearance. He maintained that it would not, and suggested that the large model of part of the bridge altered as he proposed, which was made for submission to the Royal Fine Arts Commission, but never shown them, should now be unearthed and exhibited to the public.

Why not invite tenders for reconditioning and widening the existing bridge from responsible contractors used to this sort of work by the two methods proposed—namely, (1) by use of cofferdams; (2) by compressed air chambers, which method had been used by Mr. Dalrymple Hay in the tube railways and was used a few years back in underpinning the piers of the railway bridge at Bar, in France, and, as against this, ascertain from the L.C.C. their approximate estimate of cost of dealing with the approaches of their new bridge. We should then know where we were.

Lord Crawford, in an address to the Committee, declared that it was right that Parliament should intervene in the affairs of the capital. London to-day had very few buildings of acknowledged international value, and he could only think of seven—Greenwich Hospital, the Tower of London, St. Paul's Cathedral, the Palace of Westminster, Westminster Abbey, Chelsea Hospital, and the combination of Somerset House and Waterloo Bridge, and the bridge was the only one of these which the London County Council controlled. The peak load had not yet been reached at Waterloo Bridge, and the whole trouble was the approaches. The ultimate cost of the scheme had been considerably underestimated.

[The above report is extracted from *The Times*.]

Warminster Cottage Hospital.

Interior of Ward, showing New Type of Windows (Sliding-Folding).

Messrs. Elcock & Sutcliffe, FF.R.I.B.A., Architects.

THE TOWN AND COUNTRY PLANNING BILL

VARIOUS opinions upon the Town and Country Planning Bill, now before Standing Committee A of the House of Commons, are given below :—

R.I.B.A.

The following resolutions passed by the Town Planning and Slum Clearance Committees of the Royal Institute of British Architects were unanimously approved and confirmed by the Council of the Royal Institute at their last meeting. Copies of the resolutions have been sent to the Prime Minister, the Minister of Health, and the Members of Standing Committee A :—

The Slum Clearance Committee of the Royal Institute of British Architects views with grave concern the amendments which have been moved in Committee restricting the powers contained in the Town and Country Planning Bill, and wishes particularly to impress upon Members of Parliament the vital need for the application of town-planning powers to all built-up areas; without such powers it is the Committee's view that the slum problem can never be effectively solved, and that the creation of fresh slums, due to the indiscriminate mixture of buildings which results from the want of zoning, will continue.

The Town Planning Committee of the Royal Institute of British Architects, at a meeting held on March 3, passed unanimously the following resolution :—

> This Committee desires to thank the Minister of Health for reintroducing the Town and Country Planning Bill, which met with the general approval of all political parties in the House of Commons during the last Session. The Committee is of opinion, however, that, if the vital provisions of the Bill should be amended, particularly as regards Clause 6, as now proposed by Members of Standing Committee A of the House of Commons, it will not be possible for planning authorities to ensure the orderly and efficient development of towns, nor to provide adequate measures for the preservation of rural areas. The Committee is unanimous in recording its regret that the Bill is in danger of being rendered ineffective by reason of certain amendments which have been put forward, which action is in opposition to the considered opinion of local authorities and Regional Committees, who are now possessed of a wide, practical experience of urban and rural planning under the Act of 1925.
>
> In view of the urgent necessity for economy in the planning of all land, the Committee, therefore, respectfully urges that His Majesty's Government and all Members of Parliament will take action to ensure that the Bill is not deprived of the original provisions necessary for a wise control over development and the reconstruction of areas already built on.

The Town Planning Institute.

At a meeting of the Town Planning Institute last Friday, the President, Dr. R. C. Maxwell, before Mr. W. A. Cadbury gave his talk on "Old Maps" (which we propose to report in our next issue), said he was sure he would be forgiven if he intervened with a statement which was called for by the present very serious situation in connection with the Town and Country Planning Bill. As the Rt. Hon. Sir Leslie Scott, one of their honorary vice-presidents, remarked, all who had at heart the restoration of the nation's prosperity by re-establishing its credit and restoring its earning power, welcomed the introduction of this Bill by the National Government. The general proposals contained in the Bill largely owed their inception to the advocacy of the Rt. Hon. Neville Chamberlain, M.P., another of their honorary vice-presidents. They had lively recollections of the support given to proposals for rural preservation by the late Captain R. Ronald Henderson, M.P., in his address to them last year. In the economic world, Sir Basil Blackett had recently stated that "the immediate task to which we should bend all our energies is to prove to ourselves and to the world that planning is consistent with freedom and freedom with planning." Planning was essential to both the conversion and development of our resources. Town planning had been in force since 1909, and now, after the experience of 22 years, certain amendments and extension of powers were proposed, following the approval by Parliament of principles applied in nineteen local Acts, one of which related to a whole county—the county of Surrey. The Bill passed second reading of the House of Commons without a division, but already, in Committee, its effectiveness had been greatly reduced, and in some respects the clock had been put back to the position prior to 1909. That Institute had always refrained from taking part in any political controversy and was in no sense a propaganda body, but the gravity of the present situation demanded that the general public should be informed as to what would be the effect if the opponents to this national measure had their way. The effects might be briefly stated as follows:—(1) The adjustment of our towns to meet modern requirements of industry and commerce and to secure the safety and convenience of the inhabitants, and the preservation of our countryside would be rendered economically impossible. (2) Rights of the community sanctioned by Parliament 22 years ago would be withdrawn. (3) Powers sanctioned by Parliament in nineteen local Acts would be cancelled. (4) The possibilities of effective planning for this country would be less than those that were available in almost every other civilised country, notably our Continental competitors. (5) The cost of planning would be increased. (6) *But* the land speculator would have established his right to compensation from the community whenever he was restrained from spoiling the face of our land, or whenever he was required to subordinate his private gain to the good of his neighbours or of the community as a whole, though this was done in pursuance of a plan of ordered development devised to preserve values as well as amenities, and which was ultimately in the true interests of the owners of land and property generally.

The Home Owner's Position.

Sir Enoch Hill, President, Halifax Building Society, writes as follows :—

"SIR,—The general objects of the Town and Country Planning Bill are undoubtedly in keeping with the needs of our time; but the Bill's provision for a toll upon the home-owner of 75 per cent. of any increase in the value of his property caused by improvement schemes carried out under the Act is calculated seriously to embarrass the owner of a small house. I agree with the suggestion made by Lord Hartington that payment of betterment should be made only when realised, and not merely when estimated, because that would obviously be a protection to the owner against a demand for unrealised capital which he could ill afford. In fairness to property owners, and in particular to those of very moderate means who are buying houses out of income, I would urge some modification to remove or lessen this threatened contingent burden."

Auctioneers' and Estate Agents' Institute.

W. C. Roland Field, President of the Auctioneers' and Estate Agents' Institute of the United Kingdom, writes as follows :—

"SIR,—The Council of the Auctioneers' and Estate Agents' Institute is of opinion that the Bill threatens injustice and damage to owners of property and infringement of their normal rights of access to the Courts of Law. The powers proposed to be given by the Bill are so extensive that local authorities are to be empowered to prescribe, even though indirectly, the plans, elevations, and materials of buildings which are to be built, and to restrict the use of buildings, including, in the case of dwelling-houses, the letting in separate tenements. Power is also given to remove existing buildings. With the exception of the removal of existing buildings, the Minister may declare that no compensation is payable to owners for any depreciation of their property, but, on the other hand, the right is given to local authorities to assess the charge payable by the owner for an assumed betterment, before any such betterment or improvement has become apparent or has been established by the award of an arbitrator. The immediate effect of these proposals will be to create a sense of insecurity and uncertainty, and a general depreciation in the value of property is likely to result. Another aspect of this Bill to which the Council desires to draw attention is the further denial, to the owner, of access to the Courts of Justice, and the relegation of decisions to a Government Department. All decisions necessary in connection with these schemes are to be made by the Minister of Health, from whose decision there is no appeal. It is true that the owner is to be permitted to appeal to the High Court in order to question the *validity* of an order or a scheme, but he is debarred from questioning the *merits of details* before any Court of Justice. My Council is of opinion that proper opportunity should be afforded to any person affected, of access to such a Court as would be governed by the rules of evidence, and that every decision should be accompanied by a statement of the reasons for such decision."

The Preservation Societies.

A conference of representatives of rural preservation societies was held at Ecclestonsquare, Victoria, on Saturday, and was largely attended. Lord Crewe presided.

Sir Edgar Bonham-Carter, opening a discussion on the reservation of open spaces under town planning schemes, said it looked as if the amendments recently moved and accepted in the Town and Country Planning Bill would entirely destroy those additional powers which they had hoped local authorities would obtain under the Bill and which were so necessary if the country was to be supplied with adequate open spaces and places of beauty were to be preserved. The difficulties of the past had centred in the fact that all land for planning purposes was treated as though it were building land, or likely to be developed for building purposes, when as a fact there was no possibility of its being built upon for generations to come, if ever. The effect of the amendments already accepted by the Minister of Health in Standing Committee was that local authorities would get very little additional power under this Bill to that which they had at present. He proposed a resolution that: "Realising that the adequate provision of public and private open spaces in all parts of the country, although essential to the national welfare, cannot be satisfactorily secured by means of existing powers, this conference considers it a matter of urgent importance that planning powers should be extended to all undeveloped land, and therefore urges that the Town and Country Planning Bill should not be allowed to be so weakened as to prevent all rural areas from being dealt with under planning schemes."

The chairman said it seemed that some members of the Committee which had been considering the Bill thought the rights of property were being unfairly infringed in what they considered to be a Socialistic sense. In that particular matter the unrestricted infringement of the rights of property had not been happening. One had only to travel about the country to see what irreparable damage had already been done by the exercise of the rights of individual owners. Under existing legislation small and even some large owners had been tempted to turn into cash portions of their land, with the result of destroying the amenities of substantial areas. Large numbers of the public were agreed that that should be stopped, and because this measure would bring about the cessation of these misfortunes they all desired to support it.

The resolution was carried.

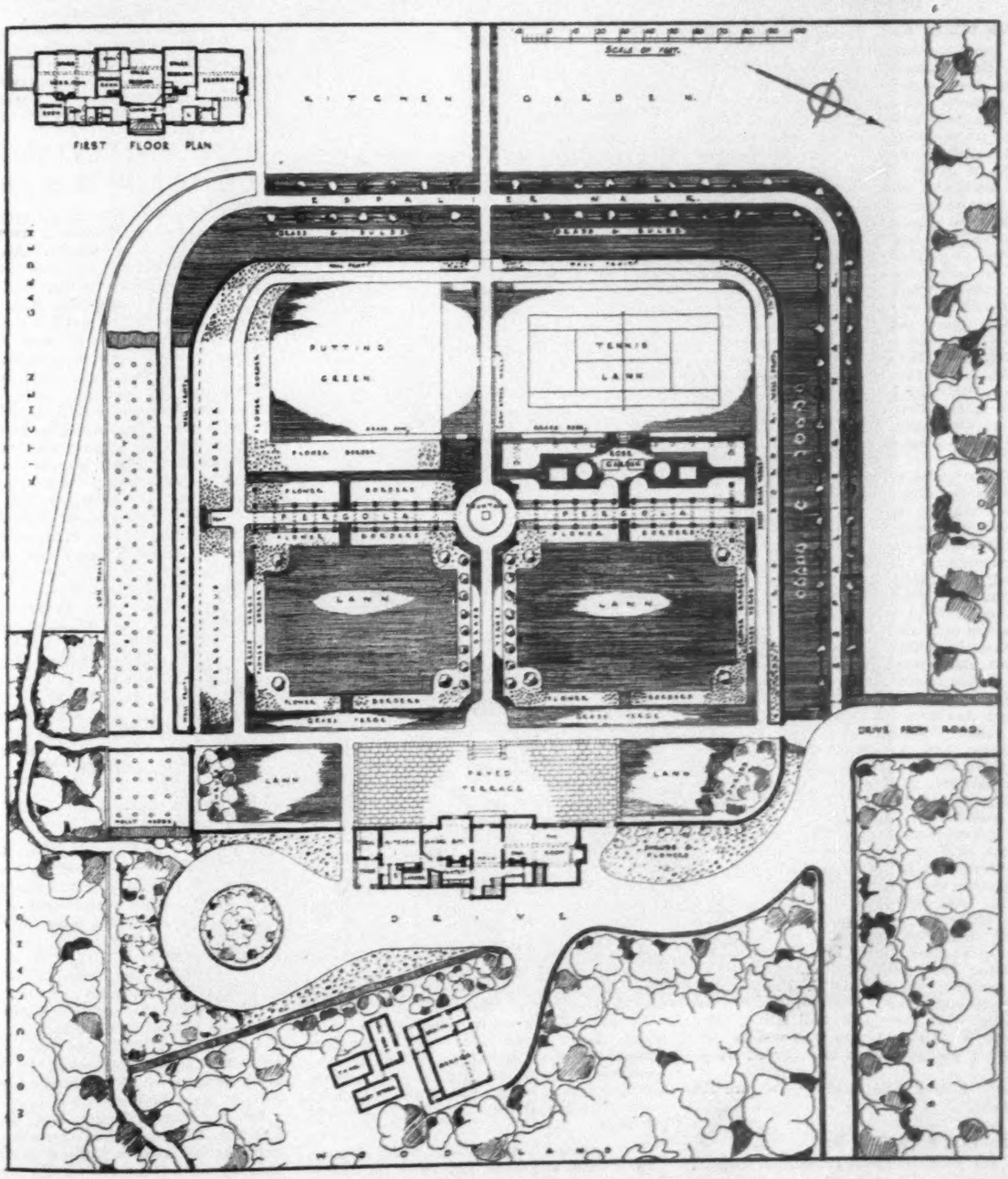
LONDON SOCIETY

THE annual meeting of the London Society was held on Monday at the Royal Institution, when a large number of members were present. Lord Crawford and Balcarres occupied the chair, and in a reference to the Town and Country Planning Bill now before Parliament, said that the measure seemed to be exciting a quite unnecessary degree of alarm. The powers which the Bill proposed to confer upon local authorities were already vested in 19 or 20 authorities scattered all over the country. The whole of Surrey, for instance, was now subject to those powers, and the powers were also exercised by other county councils and great municipalities, so far as he knew to the satisfaction of their constituents. He had no reason to think that if the powers were extended elsewhere they would be more liable to exaggeration or abuse than they had been by the authorities which already had them.

Another matter on which he would like to say a word was the preservation of Waterloo Bridge. It was proposed, he profoundly regretted to say, to remove the bridge entirely and to replace it by a six-line bridge. He believed that that scheme would break down on grounds of traffic, of engineering, and of finance; but the point to which he wished to devote himself was the argument that if what was now a three-line bridge was extended to become a four-line bridge it would destroy the whole bridge, as it would be no longer intact and would cease to have value. In his opinion that represented a degree of piety, of logic, and of conservatism which approached the pedantic. For his part he believed that the change, although it would be a decided change from what Rennie designed, would, from certain points of view, be almost imperceptible. So powerful and so gigantic were the lines of Waterloo Bridge that the process of corbelling out could not really impair that massive and majestic structure. He asked himself how far a repaired or restored building was worth preserving. That could be tested by experience. The Pantheon in Rome had been reconstructed and adapted for purposes other than its original object at least seven times in the last 2,000 years, but, though a ruin and a mere shred of its previous magnificence, it remained to this day one of the three or four greatest buildings in the world. A more familiar example was the wonderful range of our English Gothic cathedrals. Not one of them was intact or represented the original lines of its first creator. If Rennie himself were here, he, being a practical man, would be the first to adapt his bridge to the requirements of the day.

Lord Jessel moved the adoption of the annual report, and Sir Arthur Holbrook seconded the motion, which was carried.

Mr. F. E. Eiloart was elected as treasurer of the society to fill the place of the late Sir Henry F. New, and, on the motion of Lord Askwith, seconded by Mr. J. B.



Hardwick Manor, Bury St. Edmunds: Garden Plan, etc.

MESSRS. KERSEY, GALE AND SPOONER, Architects.

Priestley, the council of the society was elected. Mr. Priestley said he was delighted that the society was encouraging schemes for housing, for housing was the greatest problem of modern times. All other amenities, such as education, libraries, and social work, were wasted as long as the housing of the poor continued in its present state. He also asked if any proposals had been considered to convert certain streets in London into what might be called arcades. To run motor-omnibuses through Bond-street, in his opinion, was like using a violin for firewood.

Mr. Maurice E. Webb, in proposing a vote of thanks to the management of the Royal Institution, referred to the grave situation in which the building industry found itself to-day. Fifty-five million pounds' worth of work, £20 millions in London alone, had been stopped, and there had been repercussions from the bottom of the industry to the top. One in every three of the men engaged was out of work, and the state of affairs in the architectural profession had never been equalled within living memory. He was glad to say that the conditions amongst architectural assistants had been eased in some degree by the action of the R.I.B.A. in asking for subscriptions from architects who were in work. That money was being used, in co-operation with the London Society and the London Survey Committee, to enable the recipients to work upon three matters of vital importance to London, (*a*) the recording and measurement of historical buildings; (*b*) the preparation of slum clearance schemes; and (*c*) the making of a development plan for London and its 28 boroughs.

ILLUSTRATIONS

PLATES.

Hardwick Manor, Bury St. Edmunds.

This house has been erected on the site of the original dower house, which had probably been demolished in the first half of last century and another building substituted. The new house stands in the original position in the centre of the east wall of the old walled garden, and the whole of the property of about 180 acres forms part of the old Hardwick estate.

The ground-floor plan was dominated by the desire to preserve two interesting and ancient vaulted wine cellars, and certain infelicities of planning arise from the necessity of providing access to these cellars and leaving them intact. The original manor of Hardwick was demolished some years ago, when the estate came into the market in lots. The present owner of the new house secured many of the interesting relics, panelling, etc., from the old house, and it was felt that a building in the sixteenth-century manner rather than a modern structure would more fittingly accommodate these elements, and to some extent preserve the continuity of the rich historical associations.

The lower parts of the external walls are in flint, with brick and stone dressings in the local manner, and the upper parts are of timber construction in old English oak plastered between on brick nogging. All the living-rooms on the ground floor are panelled, principally with panelling adapted and fitted from the demolished manor house. The whole of the floor construction is in old English oak, with the timbers and joists left exposed. There are nine bedrooms on the first and second floors and five bathrooms in the house.

A plant for the supply of electric power and light has been installed, and a well has been sunk equipped with pumping machinery, and a large supply reservoir constructed for the supply of water to the house, garages, garden, etc. The house is centrally heated by a low-temperature hot-water installation.

The general contractor was Mr. Harvey G. Frost, of Bury St. Edmunds, and the sub-contractors were as follow :—Price, Lea and Co., heating and hot water; Hayward-Tyler and Co., Ltd., pumping machinery; United Water Softeners, Ltd., water softener; The Crittall Manufacturing Co., Ltd., metal windows; Thomas Elsley, Ltd., wrought iron and other ironmongery; Shanks and Co., Ltd., sanitary fittings; C. C. Pudney and Co., electrical work; Tile and Mosaic Decorations, Ltd., floor and wall tiling. Mr. Herbert W. Palliser was responsible for decorative plaster panels and carved woodwork.

Messrs. Kersey, Gale and Spooner are the architects.

New Bethlem Royal Hospital.

The new Bethlem Royal Hospital is situated in a beautiful old park of about 200 acres at Monk's Orchard, Beckenham, Kent. Several of the new buildings were illustrated and described in our issue for October 3, 1930. We give in this issue some illustrations of further buildings.

Messrs. John A. Cheston and C. Ernest Elcock, FF.R.I.B.A., are the associated architects.

"Grosvenor Buildings," Grosvenor-place.

This building, until recently a large town house with a frontage to Grosvenor-place, and extending to Pembroke-mews at the rear, has now been converted for use as the head office of the Road Transport and General Insurance Co., Ltd. Internal walls and partitions have been removed generally throughout the building to give large open office space, and the low rear extension has been rebuilt to provide accommodation, comprising men's lavatories and cloakroom in the basement, filing room on mezzanine floor, and a portion of the accident department on the ground floor. The old front area steps have been replaced by a new wide staircase built from the street pavement to the basement to serve the staff entrance.

The front portion of ground floor has been remodelled to provide a large office, panelled throughout in polished pine and fitted with a public counter in mahogany. The public space is paved with rubber tiling and approached through a new mahogany revolving door at the main entrance. Beyond this is the marble hall, with the original marble staircase from ground to second floors. The portion of the building beyond this hall has been reconstructed to provide accommodation for an electric passenger lift serving from basement to fourth floor, and a new staff staircase of reinforced concrete, finished with "Biancola" dadoes, margins, risers and strings, and rubber treads. The balustrades are of ornamental ironwork, with bronze handrails. This staircase, being in a central position, serves the offices on differing floor levels in the front and rear portions of the building.

The large front room on the first floor has been sub-divided to provided the board room suite, and new ceilings have been constructed at suitable heights for the floor areas. All the partitions are built of "Moler" blocks, lined with walnut panelling. The marble mantelpiece, removed from the ground floor and refixed, is an attractive feature in the board room. On the same floor as the board room are large rooms devoted to the clerical and typing staff of the executive and to the accounts department. Other accommodation may be studied from the plans reproduced.

In the boiler house is a low-pressure hot-water boiler connected with radiators throughout the building, except in the panelled rooms on the ground floor and in the board room suite, which are heated by warm air taken through ducts to the required positions.

The general contractors were Messrs. Geo. Parker and Sons, Ltd., and the following were sub-contractors :—Trollope and Sons, panelling and plasterwork and electric light installation; H. W. Dutton and Co., Ltd., heating and hot-water work; Young and Co., steelwork; Johnson's Reinforced Concrete Engineering Co., Ltd., steel reinforcement; Art Pavements and Decorations, Ltd., terrazzo and "Biancola" work; Hammond Bros. and Champness, Ltd., passenger lift; T. B. Colman and Sons, Ltd., revolving entrance door; Tasker and Booth, Ltd., cleaning front of building; Stevens and Adams, Ltd., wood block floors; Mellowes and Co., Ltd., metal windows and lights; Mellowes and Co., Ltd., and W. James and Co., Ltd., leaded lights and "Copperlite" glazing; Garton and Thorne, Ltd., staircase balustrading; Robert Husbands and Co., Ltd., ornamental ironwork; City Iron Company, sanitary fittings; Robert Husbands and Co., Walter Cassey, Ltd., and Yannedis and Co., door furniture; North British Rubber Co., Ltd., rubber flooring and tiling; Asbestos Cement Building Products, Ltd., rubber floor and asbestos cement.

Independent contractors were as follows :—Brilliant Sign Co., Ltd., ornamental grilles and clock; British Home and Office Telephone Co., Ltd., internal telephones; The Synchromatic Clock Co., synchronising clocks; Sankey-Sheldon, Ltd., office furniture.

The architects are Messrs. Geo. Pearson and Son; the quantity surveyor was Mr. Walter J. Holt; the clerk of works Mr. H. Corben; and the foreman Mr. G. Jones.

ARCHITECTURAL ASSOCIATION RECEPTION

The Architectural Association held its 84th annual reception on Thursday, March 10, at its premises in Bedford-square. About 1,200 members and guests attended and were received by the President, Mr. A. B. Knapp-Fisher, F.R.I.B.A., and Mrs. Knapp-Fisher. Dancing was carried on until 3 a.m. These annual gatherings are pleasant functions, bringing together old acquaintances and renewing old friendships which otherwise might lapse. In addition, they keep the younger members and old A.A. scholars in touch with each other, enabling them to compare notes to their mutual advantage. The large number of guests present speaks well for the popularity of these gatherings. Amongst those present were : The Countess of Oxford and Asquith, Sir Richard Paget, Sir Edward and Lady Knapp-Fisher, Sir Stanley and Lady Knapp-Fisher, the Hon. H. A. Pakington, Mr. Walter Tapper, Mrs. Grey Wornum, Mr. and Mrs. O. P. Milne, Mr. Gilbert Bayes, Mr. Robert Atkinson, Mr. and Mrs. R. B. Solomon, Mr. Basil Oliver, Mr. L. H. Bucknell, Mr. H. Chalton Bradshaw, Mr. Charles Holden, Mr. T. Lawrence Dale, Mr. and Mrs. T. Darcy Braddell, Mr. and Mrs. J. Alan Slater, Mr. and Mrs. Stanley Hamp, Mr. Howard Robertson, Mr. C. H. James, Mr. C. Lovett Gill, Mr. Graham Dawbarn, Mr. Walter M. Keesey, Mr. Charles Holden, and Mr. F. R. Yerbury, secretary.

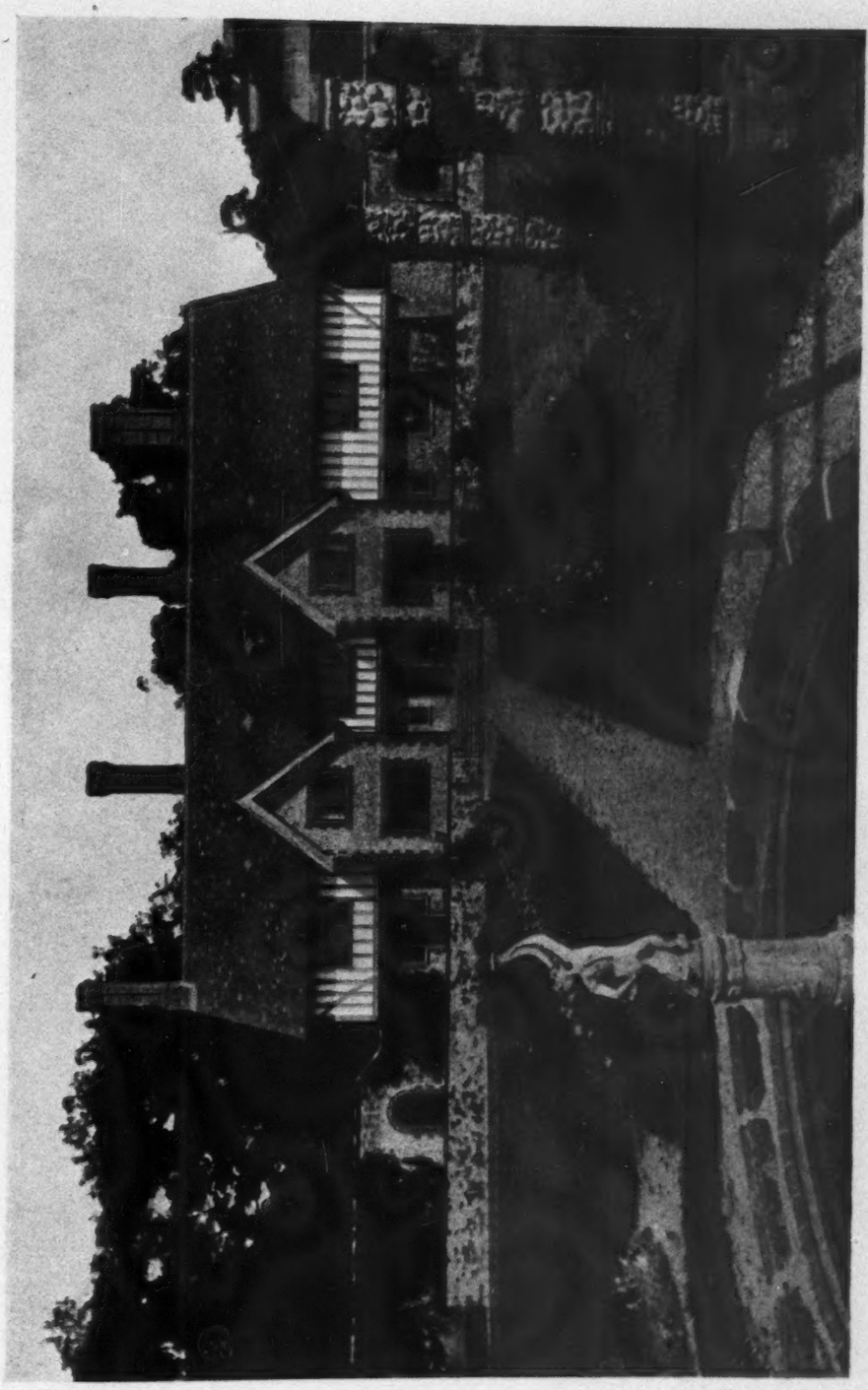
I.A.A.S. : New Elections.

Mr. Robert Lutyens has been elected a Fellow Architect Member of the Incorporated Association of Architects and Surveyors, and Mr. Paul Paget has been elected an Associate Architect Member of the same body.

Slum Clearance.

Mr. Tinker, in the House of Commons recently, asked the Minister of Health if he would state the number of schemes sanctioned by him to local authorities, under the Housing Act of 1930, for the clearance of unhealthy areas; and would he state how many persons would be rehoused when such schemes are completed.

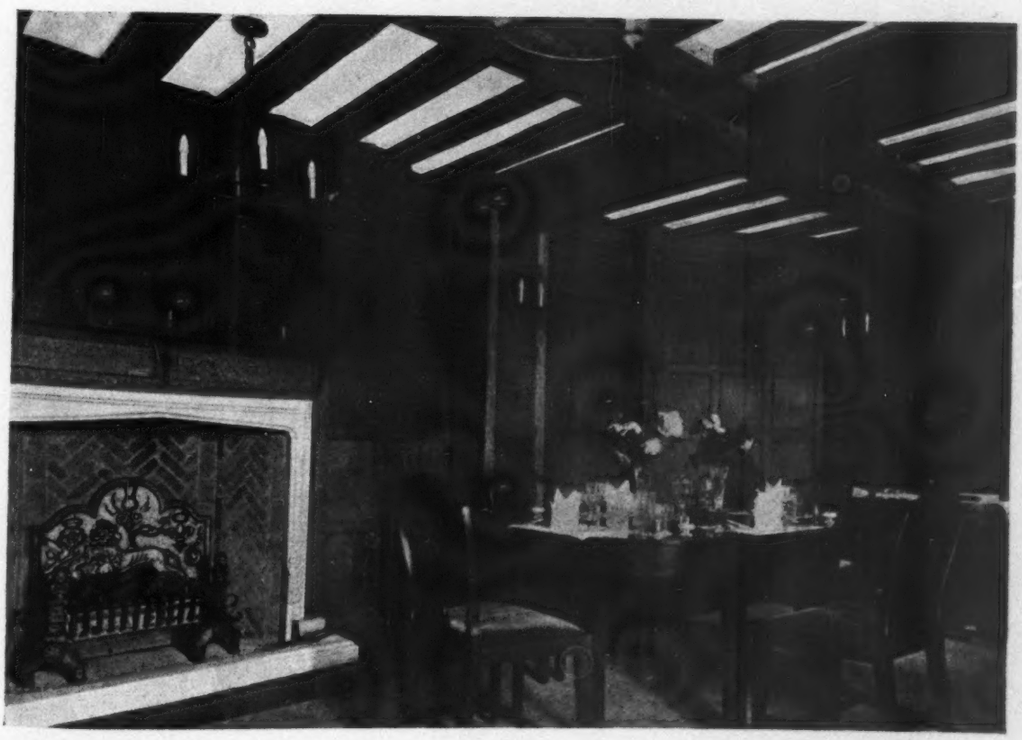
Sir E. Hilton Young said that up to February 29 last he had received resolutions declaring 394 areas in England and Wales, the clearance of which involved the displacement and rehousing of approximately 64,000 persons, to be clearance areas under the Housing Act, 1930. These resolutions did not require his sanction.



Hardwick Manor, Bury St. Edmunds: Garden Front.

MESSRS. KERSEY, GALE AND SPOONER, Architects.

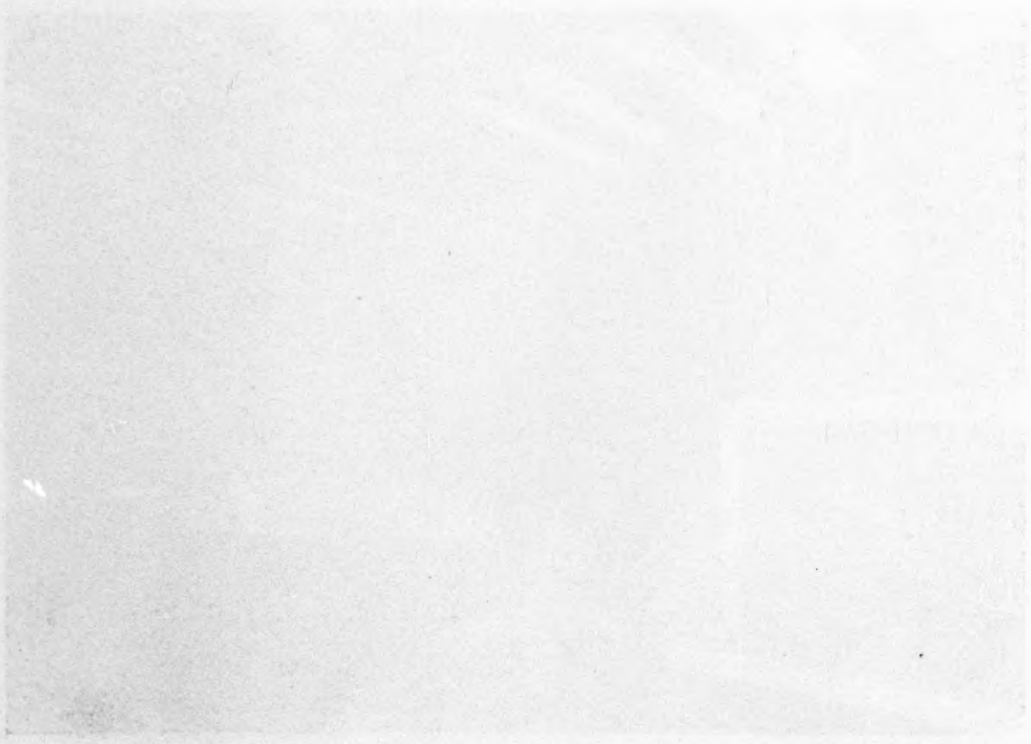
The Oak Room.

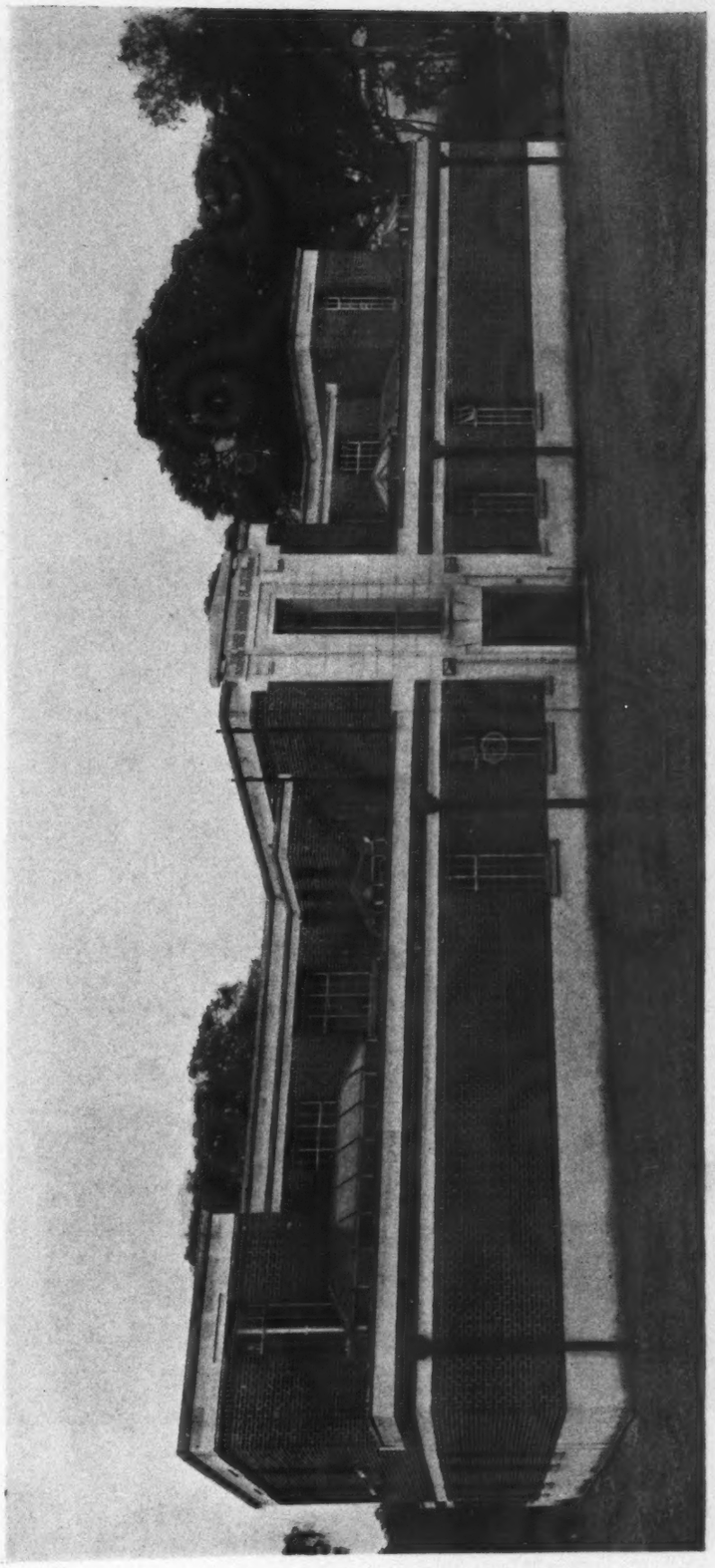


Dining Room.

Hardwick Manor, Bury St. Edmunds.

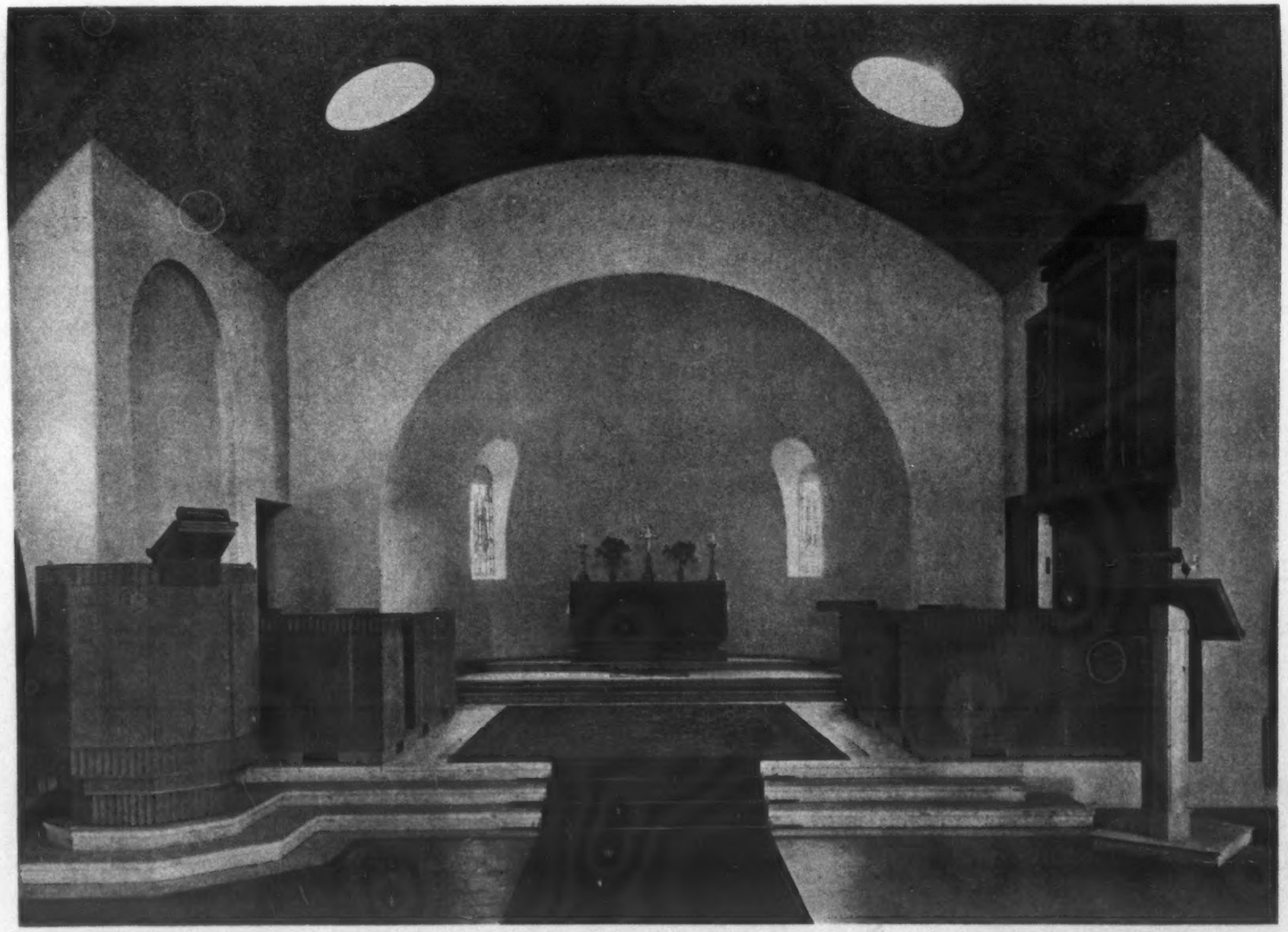
Messrs. Kersey, Gale and Spooner, Architects.





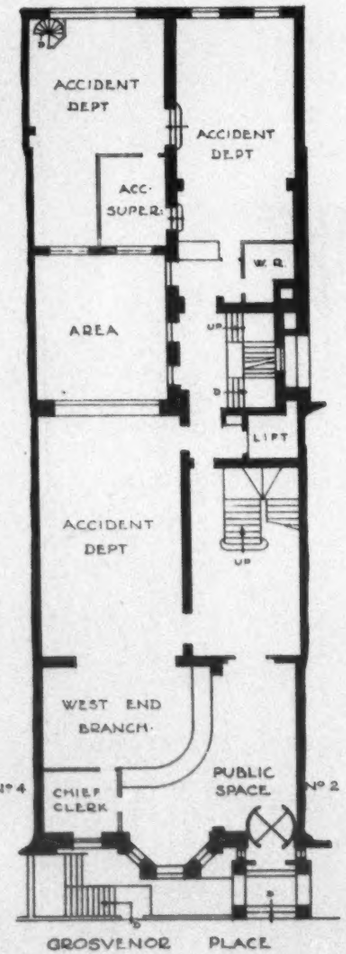
The New Bethlem Royal Hospital, Monk's Orchard Estate, Beckenham, Kent : Lord Wakefield Science and Treatment Laboratories.

Messrs. John A. Cheston and C. Ernest Elcock, FF.R.I.B.A., Associated Architects.

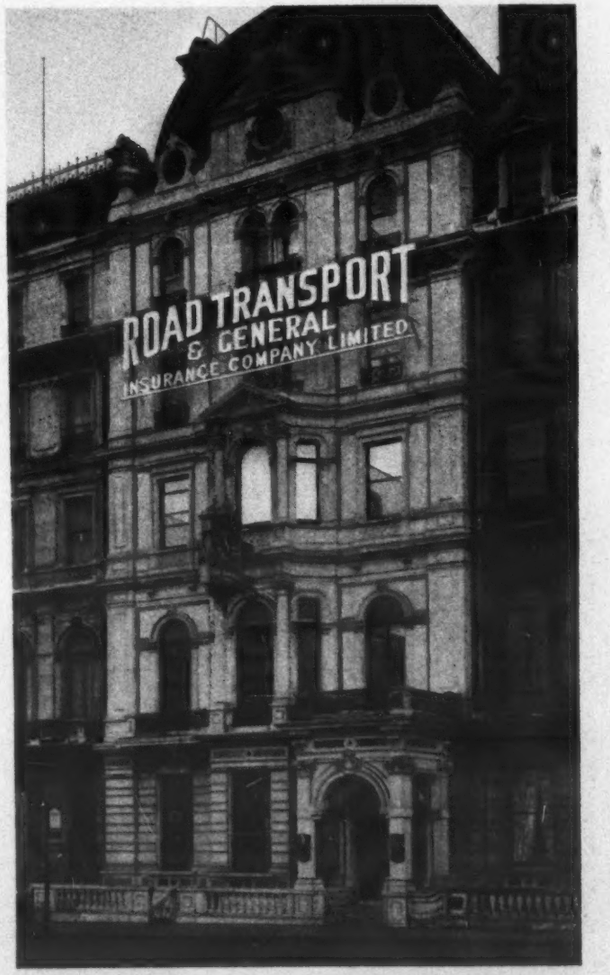


The New Bethlem Royal Hospital, Monk's Orchard Estate, Beckenham, Kent: Chancel and Sanctuary of Chapel.

MESSRS. JOHN A. CHESTON AND C. ERNEST ELCOCK, FF.R.I.B.A., Associated Architects.



GROUND FLOOR PLAN



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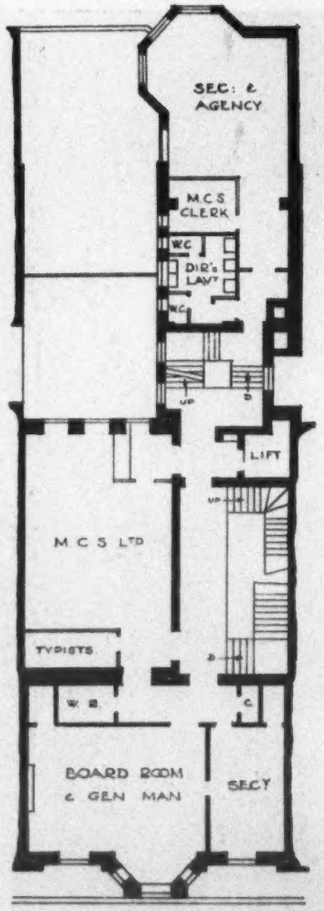
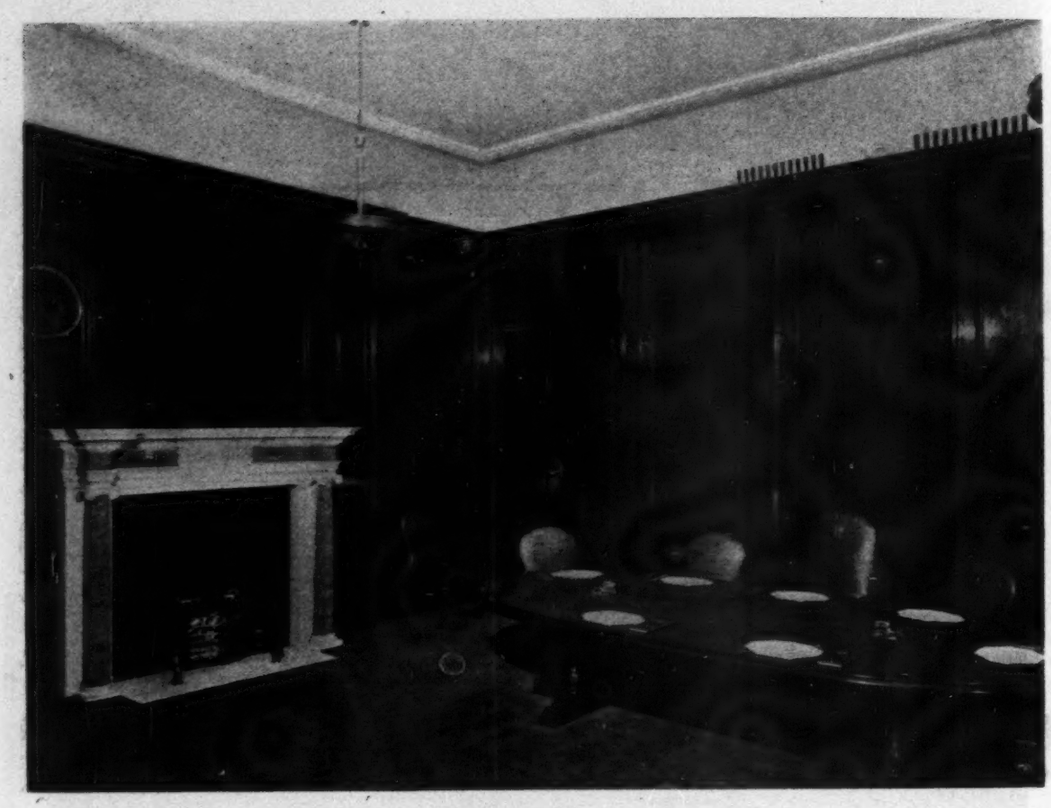


FIRST FLOOR PLAN.

New Offices, "Grosvenor Buildings," Grosvenor Place, S.W.

Messrs. Geo. Pearson and Son, Architects for Conversion.



Board Room and General Manager's Office.

West End Branch.

New Offices, "Grosvenor Buildings," Grosvenor Place, S.W.

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THE ARCHITECTURAL ASSOCIATION

THE PLANNING OF LONDON.

A LECTURE on this subject, illustrated by a large number of lantern slides, was delivered before the Architectural Association on Monday evening, at 38, Bedford-square, by Mr. W. R. Davidge, F.R.I.B.A. The President of the Association (Mr. A. B. Knapp-Fisher, F.R.I.B.A.), who occupied the chair, said the present time was a critical one in the history and development of town planning. The Town and Country Bill was before Parliament, and those who had worked for it, and knew how it would help the planning of country and town, were very anxious about its becoming part of the law of the country. It would be a tragedy if it were dropped or wrecked.

Beginning his paper, the lecturer showed on the screen a map showing the roads of Roman Britain, and said that in the past every generation had had its problem of the planning of London. It might be that the problem was easier when London was smaller, but every generation had done its bit, and, relatively speaking, considerably less had been done by the present generation and their immediate predecessors than by those who had gone before them. The Romans had planned their empire, and the roads they had made in Britain were still the backbone of the road system of this country. Those Roman roads focussed near London, though their actual crossing points were not within the city boundaries. In London and its neighbourhood the Roman roads could still be traced, excepting where in mediæval times they had ceased to run straight through marshy land, a new road being made that followed the contour of the ground at a higher level.

Continuing with other slides, the lecturer showed London's growth through the centuries until to-day. He showed the Roman city within its walls. As conjecturally restored, this city had a quay along the riverside, and a wall on the north, west and east. The centre of the city was about where the Mansion House now stands. West of this ran what is now Cheapside, while another main street ran east. Smaller streets or lanes, all running north and south, traversed the city from the river to the northern wall. The lecturer reminded his audience that Sir Christopher Wren, when rebuilding St. Mary-le-Bow, had discovered an ancient tessellated pavement, and on this had founded the church tower. Where Leadenhall Market now stands was a Roman fortification or other large building which had played a great part in the development of London at a later date; because as the city grew beyond the walls the street leading eastward was deflected north and south so as to avoid this obstruction, and thus the main Roman street to the east was lost.

Other slides showed London spreading beyond the walls and across the bridge into Southwark, so that in Queen Elizabeth's time, when it had 300,000 inhabitants, an Act of Parliament was passed to prevent further building within three miles of the gates of the cities of London or Westminster. In those days a suburban district of London lay west of Fleet-street along the Strand, where the nobles built their great houses with lawns and gardens sloping down to the river. Such names as Essex-street, Arundel-street and Surrey-street recalled that time. About where the Tottenham Court-road tube station is now was then the pretty little village of Saint Giles-in-the-Fields.

The lecturer explained that this Act of Elizabeth was not the first Town Planning Act for London: that had been passed as early as 1189. In the reign of the king who succeeded Elizabeth, James I, an Act was passed making it compulsory to build in brick, so as to conserve the nation's store of oak for shipbuilding. A map of London in the time of the Commonwealth showed London extending on both sides of the river and Pall Mall just being formed. Around the London of those days the Parliament had had an earthwork thrown up, and to-day Mount-street in the West and another Mount-street in the East were reminders of the ramparts that the Parliament had built. Several plans for the rebuilding of London had been made after the great fire, and Custom House Quay was an interesting relic of the one made by Wren. He had provided for a public quay forty feet wide to extend from Temple Bar to the Tower, and this part of his plan had been adopted and the quay made. But later on it was encroached upon bit by bit, until in 1820 an Act of Parliament legalised the buildings that had been or might be built upon it. However, the piece in front of the Custom House remained until now

In the time of Queen Anne, and later under the Georges, there was, said the lecturer, a good deal of planning. Great landlords laid out estates in the neighbourhood of London. Queen-square was thus laid out, its northern side being left unbuilt so as to preserve the views towards Highgate and Hampstead. Buildings had afterwards closed in this northern opening, but Portland-place had had a happier fate. That also had been left open to the north, and Park-crescent and Regent's Park being laid out later, it had remained open until to-day. All the London squares had been laid out on the building land on the outskirts of the town; they were all definite building development in the neighbouring fields. The Champs Elysées and the Place de la Concorde belonged to the same period.

The later years of George II and the earlier years of George III were great years in the history of London town planning. At that time John Gwynn prepared a plan for London and Westminster, showing a bridge on the site of Waterloo Bridge fifty years before that bridge was built, an embankment on the north side of the Thames one hundred years before the Victoria Embankment was made, and the Admiralty Arch, which had only been built in recent years. On the south side it showed an embankment which had not yet been made. A little later came Regent-street, another example of town planning. It was built chiefly on the site of an old street called Swallow-street, and a great outcry was made at the time about the waste of public money.

Some of the slides showed pictures of the earlier bridges. There were old Westminster Bridge, built in 1749, and old Blackfriars Bridge, built ten years later. The houses were taken from old London Bridge in 1760, after which it remained standing until 1830. A map of London in 1790 showed that the south side had then been planned as far as where the obelisk used to stand—now replaced by a tower—one mile from the bridges. Another map dated 1810 showed the East India Dock-road laid out by the dock companies. About that time Great Dover-street was made as a by-pass to the old Tabard-street. An extraordinary contrast was made by showing maps of the neighbourhood of the London Hospital in 1746, 1790, and to-day.

Among many other slides, an interesting one showed a suggestion of 1829, according to which London was to have a belt of trees around it, then a ring of suburbs, then another belt of trees, and so on, for ever. Nothing had come of this idea in London, but it had been used to a certain extent by the town planners of Adelaide and in various New Zealand cities.

One slide showed a curious suggestion for a working-class suburb. The railway station was taken as the centre, and from this radiated streets like the spokes of a wheel—every street leading straight to the station. Other slides showed that along the Lea valley there is still a good deal of land that is not built on, along which might be formed a belt of park land leading from the docks to the open country.

Yet other slides showed London as it is to-day, with the various town planning schemes that have gone to create it outlined on the map. In the City, the audience was told, there were streets that had been widened three times in the hundred years. As late as 1810 the only entrance to the City at Temple Bar was through a gateway twenty feet wide.

Nearly all improvements to London, said the lecturer, were made at the national expense until the early part of the nineteenth century, when the Metropolitan Board of Works was formed. That board had done a number of things, such as making the Victoria Embankment. Afterwards, the London County Council had carried on what the Metropolitan Board of Works had proposed; but, looking at the record of the last forty-three years, it could not be said that the present generation had done anything like so much as previous ones had done for the future of London.

The Earl of Mayo, who moved a vote of thanks, said we went on from generation to generation without any big ground plan worthy of London. An excellent Town and Country Bill was now before Parliament, but it would be spoilt if some of the amendments now proposed were carried. A most important point in the Bill was that the planning authority should be able to deal with all land.

Alderman Ewart Culpin said that in the County of London there were 173 bodies with statutory powers, and in the outer ring making up Greater London there were another 130. Each of these 303 authorities had some jurisdiction over something or other, but there was no controlling body. As a member of the London County Council he had been for the last nine years trying to get that authority to make a plan. At the moment the London County Council was waiting to see in what form the Town and Country Planning Bill was passed into law. In the eastern part of London there were six square miles of obsolescent housing that could be converted into decent homes for people if only a plan was carried through. We might take the East End of London and go right down through Whitechapel, Poplar, West Ham and East Ham to Ilford, replanning the whole area, and if we parcelled the land out properly and made proper roads out to the country, including the Lea valley road suggested by Mr. Davidge, the replanning could be made a financial success. Recently, when in Morocco, he had found there a system of town planning and pooling of landlords' interests, by which all landowners were brought together and made into a statutory body that had to consider the planning—making new roads, making reservations for public buildings and the like, and redistributing the land. In the redistribution of the land, each landowner got a little less than he had before, but the smaller area was much more valuable. It would be a tragedy if the Bill now before Parliament was lost.

Mr. Gilbert Jenkins said it was impossible to set a bound by putting a green belt around a developing city; but between the great lines of traffic radiating out there were ever-widening wedges of land which must of necessity be of less and less value as it got away from the main lines of traffic. Land always rose in value on the main lines of transit more than in the intervening spaces, and it would be very logical if the green wedges were transformed into a series of parks and open spaces.

Mr. Harding Thompson said a Bill on the principle of the Act of Queen Elizabeth, prohibiting building within three miles of London, might possibly work to-day. Our modern means of transit would enable people who worked in the City to live in the ring of suburbs outside the green belt. London was too big: we must decentralise and recentralise. Letchworth and Welwyn were examples of what might be done along those lines. Previously to the last financial crisis the L.C.C. had budgeted £6,000,000 for twelve months' expenditure on housing: the money might be better spent building satellite towns.

Mr. W. J. H. Leverton also spoke.

The vote of thanks was heartily accorded and the lecturer replied to the discussion.

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Beginning his paper, the lecturer showed on the screen a map showing the roads of Roman Britain, and said that in the past every generation had had its problem of the planning of London. It might be that the problem was easier when London was smaller, but every generation had done its bit, and, relatively speaking, considerably less had been done by the present generation and their immediate predecessors than by those who had gone before them. The Romans had planned their empire, and the roads they had made in Britain were still the backbone of the road system of this country. Those Roman roads focussed near London, though their actual crossing points were not within the city boundaries. In London and its neighbourhood the Roman roads could still be traced, excepting where in mediæval times they had ceased to run straight through marshy land, a new road being made that followed the contour of the ground at a higher level.

Continuing with other slides, the lecturer showed London's growth through the centuries until to-day. He showed the Roman city within its walls. As conjecturally restored, this city had a quay along the riverside, and a wall on the north, west and east. The centre of the city was about where the Mansion House now stands. West of this ran what is now Cheapside, while another main street ran east. Smaller streets or lanes, all running north and south, traversed the city from the river to the northern wall. The lecturer reminded his audience that Sir Christopher Wren, when rebuilding St. Mary-le-Bow, had discovered an ancient tessellated pavement, and on this had founded the church tower. Where Leadenhall Market now stands was a Roman fortification or other large building which had played a great part in the development of London at a later date; because as the city grew beyond the walls the street leading eastward was deflected north and south so as to avoid this obstruction, and thus the main Roman street to the east was lost.

Other slides showed London spreading beyond the walls and across the bridge into Southwark, so that in Queen Elizabeth's time, when it had 300,000 inhabitants, an Act of Parliament was passed to prevent further building within three miles of the gates of the cities of London or Westminster. In those days a suburban district of London lay west of Fleet-street along the Strand, where the nobles built their great houses with lawns and gardens sloping down to the river. Such names as Essex-street, Arundel-street and Surrey-street recalled that time. About where the Tottenham Court-road tube station is now was then the pretty little village of Saint Giles-in-the-Fields.

The lecturer explained that this Act of Elizabeth was not the first Town Planning Act for London: that had been passed as early as 1189. In the reign of the king who succeeded Elizabeth, James I, an Act was passed making it compulsory to build in brick, so as to conserve the nation's store of oak for shipbuilding. A map of London in the time of the Commonwealth showed London extending on both sides of the river and Pall Mall just being formed. Around the London of those days the Parliament had had an earthwork thrown up, and to-day Mount-street in the West and another Mount-street in the East were reminders of the ramparts that the Parliament had built. Several plans for the rebuilding of London had been made after the great fire, and Custom House Quay was an interesting relic of the one made by Wren. He had provided for a public quay forty feet wide to extend from Temple Bar to the Tower, and this part of his plan had been adopted and the quay made. But later on it was encroached upon bit by bit, until in 1820 an Act of Parliament legalised the buildings that had been or might be built upon it. However, the piece in front of the Custom House remained until now

In the time of Queen Anne, and later under the Georges, there was, said the lecturer, a good deal of planning. Great landlords laid out estates in the neighbourhood of London. Queen-square was thus laid out, its northern side being left unbuilt so as to preserve the views towards Highgate and Hampstead. Buildings had afterwards closed in this northern opening, but Portland-place had had a happier fate. That also had been left open to the north, and Park-crescent and Regent's Park being laid out later, it had remained open until to-day. All the London squares had been laid out on the building land on the outskirts of the town; they were all definite building development in the neighbouring fields. The Champs Elysées and the Place de la Concorde belonged to the same period.

The later years of George II and the earlier years of George III were great years in the history of London town planning. At that time John Gwynn prepared a plan for London and Westminster, showing a bridge on the site of Waterloo Bridge fifty years before that bridge was built, an embankment on the north side of the Thames one hundred years before the Victoria Embankment was made, and the Admiralty Arch, which had only been built in recent years. On the south side it showed an embankment which had not yet been made. A little later came Regent-street, another example of town planning. It was built chiefly on the site of an old street called Swallow-street, and a great outcry was made at the time about the waste of public money.

Some of the slides showed pictures of the earlier bridges. There were old Westminster Bridge, built in 1749, and old Blackfriars Bridge, built ten years later. The houses were taken from old London Bridge in 1760, after which it remained standing until 1830. A map of London in 1790 showed that the south side had then been planned as far as where the obelisk used to stand—now replaced by a tower—one mile from the bridges. Another map dated 1810 showed the East India Dock-road laid out by the dock companies. About that time Great Dover-street was made as a by-pass to the old Tabard-street. An extraordinary contrast was made by showing maps of the neighbourhood of the London Hospital in 1746, 1790, and to-day.

Among many other slides, an interesting one showed a suggestion of 1829, according to which London was to have a belt of trees around it, then a ring of suburbs, then another belt of trees, and so on, for ever. Nothing had come of this idea in London, but it had been used to a certain extent by the town planners of Adelaide and in various New Zealand cities.

One slide showed a curious suggestion for a working-class suburb. The railway station was taken as the centre, and from this radiated streets like the spokes of a wheel—every street leading straight to the station. Other slides showed that along the Lea valley there is still a good deal of land that is not built on, along which might be formed a belt of park land leading from the docks to the open country.

Yet other slides showed London as it is to-day, with the various town planning schemes that have gone to create it outlined on the map. In the City, the audience was told, there were streets that had been widened three times in the hundred years. As late as 1810 the only entrance to the City at Temple Bar was through a gateway twenty feet wide.

Nearly all improvements to London, said the lecturer, were made at the national expense until the early part of the nineteenth century, when the Metropolitan Board of Works was formed. That board had done a number of things, such as making the Victoria Embankment. Afterwards, the London County Council had carried on what the Metropolitan Board of Works had proposed; but, looking at the record of the last forty-three years, it could not be said that the present generation had done anything like so much as previous ones had done for the future of London.

The Earl of Mayo, who moved a vote of thanks, said we went on from generation to generation without any big ground plan worthy of London. An excellent Town and Country Bill was now before Parliament, but it would be spoilt if some of the amendments now proposed were carried. A most important point in the Bill was that the planning authority should be able to deal with all land.

Alderman Ewart Culpin said that in the County of London there were 173 bodies with statutory powers, and in the outer ring making up Greater London there were another 130. Each of these 303 authorities had some jurisdiction over something or other, but there was no controlling body. As a member of the London County Council he had been for the last nine years trying to get that authority to make a plan. At the moment the London County Council was waiting to see in what form the Town and Country Planning Bill was passed into law. In the eastern part of London there were six square miles of obsolescent housing that could be converted into decent homes for people if only a plan was carried through. We might take the East End of London and go right down through Whitechapel, Poplar, West Ham and East Ham to Ilford, replanning the whole area, and if we parcelled the land out properly and made proper roads out to the country, including the Lea valley road suggested by Mr. Davidge, the replanning could be made a financial success. Recently, when in Morocco, he had found there a system of town planning and pooling of landlords' interests, by which all landowners were brought together and made into a statutory body that had to consider the planning—making new roads, making reservations for public buildings and the like, and redistributing the land. In the redistribution of the land, each landowner got a little less than he had before, but the smaller area was much more valuable. It would be a tragedy if the Bill now before Parliament was lost.

Mr. Gilbert Jenkins said it was impossible to set a bound by putting a green belt around a developing city; but between the great lines of traffic radiating out there were ever-widening wedges of land which must of necessity be of less and less value as it got away from the main lines of traffic. Land always rose in value on the main lines of transit more than in the intervening spaces, and it would be very logical if the green wedges were transformed into a series of parks and open spaces.

Mr. Harding Thompson said a Bill on the principle of the Act of Queen Elizabeth, prohibiting building within three miles of London, might possibly work to-day. Our modern means of transit would enable people who worked in the City to live in the ring of suburbs outside the green belt. London was too big: we must decentralise and re-centralise. Letchworth and Welwyn were examples of what might be done along those lines. Previously to the last financial crisis the L.C.C. had budgeted £6,000,000 for twelve months' expenditure on housing: the money might be better spent building satellite towns.

Mr. W. J. H. Leverton also spoke.

The vote of thanks was heartily accorded and the lecturer replied to the discussion.

CHARTERED SURVEYORS' INSTITUTION

CURE OF DAMP IN BUILDINGS.

FOLLOWING is taken from the conclusion of the paper on "Causes, Consequences and Cure of Damp in Buildings," read by Mr. R. Fitzmaurice, B.Sc., A.M.Inst.C.E., of the Building Research Station. The previous part was given in our last issue.

It had often been remarked, said the lecturer, that the speculative builder escaped moisture penetration through his walls. On high-class work, with a clerk of works in attendance, joints were carefully flushed up, mortar mixes were specified, and yet moisture penetrated. The speculative builder used strange mortars and sometimes did not attempt to fill his joints carefully, and yet his walls were weather resistant in the main. It was quite likely that the capillary path for moisture in the less meticulously jointed wall was less continuous, and, consequently, less likely to allow penetration of moisture under certain circumstances. In other words, "good building" from one point of view was not necessarily "good building" from another. By the courtesy of the engineer of a local authority an interesting experiment was carried out on a housing estate. Three houses were erected using identical bricks and mortar, but different methods were employed for making the joints:—

(i) Red-facing bricks, backed with clinker bricks in solid 9-in. work, built with grey-stone-lime and sand 3½ to 1, pointed with Portland cement and washed sand. All cross-joints put right through and lateral joints between stretchers thoroughly well flushed up. Plastered internally.

(ii) As above, but no flushing up of internal joints.

(iii) As above, but built as two separate 4½ in. walls, no flushing up, bonded with metal reinforcement every six courses.

On completion of the houses a hose was attached to a half-inch bibcock, full on and direct from the main, and was directed on the brickwork at 3 in. distance. The following observations were made:—

(i) Dampness appeared on the inside after 3½ hours' continuous flow;

(ii) No dampness appeared after 5½ hours' continuous flow.

(iii) No dampness appeared after 9 hours' continuous flow.

These experiments, said the lecturer, were perhaps not sufficiently closely controlled to warrant universal application, but the results were certainly interesting.

Since it is generally recognised that the solid wall is liable to allow penetration of moisture, recourse was often made to cement renderings and stuccos to provide a weather-resistant cover. Generally speaking, those materials were successful in preventing penetration of moisture, and in no case which had been brought to the notice of the Building Research Station had it been definitely established that moisture penetration was due to direct permeation through the rendering. Actually, however, troubles were by no means unusual; cement renderings, in common with cement concretes and mortars, shrank as they dried, and that shrinkage was liable to lead to the formation of cracks. Once cracks had formed, a very bad condition arose; damp penetrated through the cracks, but evaporation was hindered when favourable weather conditions followed rain, and a badly cracked rendering might actually be worse than an unprotected wall. If, as was sometimes the case, the bricks happened to contain excessive amounts of soluble salts, it might actually be impossible to apply a cement rendering satisfactorily. Cement-mortar roughcast and pebble-dashed finishes appeared to be less troublesome than the floated renderings. It might be that here shrinkage was taken up in a system of very fine cracks round individual pebbles, and the danger of moisture penetration was less than when the cracks were less numerous but larger.

Traditional Scottish practice dealt with the damp wall problem by providing an inner lining out of capillary contact with the body of the wall. The brickwork or masonry was plugged, plugs were cut off about ⅛ in. clear of the face of the wall; battens 1½ in. by ¾ in. were secured to the plugs; the battens were lathed, and the wall was then plastered. However damp the external wall might become, no moisture could reach the plaster, since apparently the timber did not provide a simple capillary path; this would appear to be a very satisfactory way of dealing with the solid wall. In the best class of work the internal partition walls were not bonded into external walls, metal ties being used. These methods of dealing with solid walls were logical when considered in the light of the capillary properties of walling materials, and were generally supposed to be reliable; no doubt they had certain disadvantages, but from the point of view of damp penetration no criticism could be offered.

It was a matter for regret, said the lecturer, that there were certain troubles which were chronic and for which no real cure existed. Temporary alleviation could be obtained, but the radical operation which would strike at the root of the trouble was usually considered to be too drastic. In selecting a treatment for damp penetration, some reasonable explanation should be required of the manner in which the materials purported to function. Tests by a reliable authority were obviously the best criterion on which to rely. It should, however, be borne in mind, when test results were under review, that although many preparations might be quite effective when freshly applied, the question of their durability had also to be taken into account.

Where there was a defective damp-course, or a damp-course lacking, there appeared to be no real remedy short of the insertion of a damp-course by one or other of the recognised methods. The provision of a lining out of capillary contact with the wet wall would often provide an indirect remedy, but the danger of dry-rot attack must always be kept in view. Some improvement could sometimes be effected by improving drying conditions. Drastic sub-floor ventilation, drainage of the foundations, and the formation of a dry area down to foundation level, were expedients which suggested themselves.

As regarded roof leakages, in most cases the remedy was obvious. Deterioration of the roof covering called for renewals, and, although an interesting subject, space did not allow of a full discussion of the multitudinous preparations available for patching. In cases where torching mortar led to damp conditions below tiled roofs, the removal of the torching would probably result in a material improvement.

The cure of a damp wall was one of the most difficult problems to deal with, especially when, as was often the case, a treatment was required which would not mar the appearance of facing brickwork or masonry. There was a great number of proprietary waterproofers on the market, and it was desirable, in selecting a treatment for any given case, to have some knowledge of the basic principle by which the material was supposed to function. A comprehensive investigation on the subject of waterproofers was in progress at the Building Research Station, and it was hoped that ultimately publication of the results would be possible; the work had not yet reached a stage where a report could be issued. The surface waterproofing treatments available might be roughly classified as depending on the following effects:—

(1) Filling of the surface pores of the material to be treated.

(2) Coating of the pores with a film of a water-repellent substance, the film not necessarily being continuous over the whole surface of the material.

(3) The provision of waterproof coating of appreciable thickness, and almost continuous nature over the whole surface.

With many waterproofers attempts were made to combine these effects. Some of them were chemically inactive with respect to the material treated; in other cases some chemical reaction was involved (either between the waterproofer and the surface treated, or between two or more ingredients used in the treatment). The water-repellent materials formed the basis of most of the colourless waterproofers and were probably the most important type to consider. It was desirable to consider the manner in which a water-repellent material delayed the penetration of moisture. Reverting to the original discussion of the mechanism of surface tension and capillary forces, it would be remembered that the curvature of the liquid surface in contact with the solid was the deciding factor in promoting attraction or repulsion of water in our capillary channel. The application of a resinous or oily substance to a porous material resulted in the deposition of an oily or resinous layer on the walls of the capillary, but, actually, the capillary was not plugged. The effect of the oily layer was to alter the curvature of the liquid surface in contact with the solid, and the surface-tension forces in the capillary might actually be reversed. Provided the external forces introduced by wind or hydrostatic pressure were not in excess of the force which the greasy capillary could exert, no moisture would penetrate; but it was evident that the moisture-repellent effect imparted by some treatments was insufficient to prevent the penetration of driving rains, and the treatments failed. Thus colourless waterproofers might not always be effective; and although the question of durability had not yet been fully investigated, there was reason to suppose that a short term of years was a fair life for treatments of that kind.

Many materials of the type which gave a continuous, or almost continuous, film were definitely effective under all conditions of exposure and were longer lived than the colourless preparations, but they must inevitably result in a drastic alteration of the appearance of the treated wall. The behaviour of oil paints and oil-emulsion-water paints was now generally known, and the difficulties of preparing the surfaces to be treated were also recognised. A new type of material which was likely to be important in the future was the coloured bitumen emulsion, and examples of materials of that class had been examined, which had excellent waterproofing properties and appeared likely to be durable.

Penetration through a cracked cement rendering or roughcast was particularly difficult to deal with; if, as was sometimes the case, the problem was complicated by a high soluble salt content of the brickwork, it might be impossible to make the rendering good. In some instances which had been brought to the notice of the Building Research Station repeated efforts had been made to repair or renew renderings over salty bricks with no success. It was necessary in such cases to apply the new rendering out of capillary contact with the brickwork, and such expedients as rendering on lathing secured away from the face of the wall on battens, or rendering on lathing over a bituminous insulating layer, became necessary. In particularly difficult cases of penetration the use of an internal lining, out of capillary contact with the wet wall, might be the most satisfactory remedy. It had to be borne in mind, however, that the conditions of joist ends and flooring in contact with the wet wall might be very bad. In conclusion it might be stated that the wet wall was often so very difficult to deal with that every care should be taken in the first instance to erect a wall which was capable of preventing damp penetration.

Ordnance Survey Maps.

The Chartered Surveyors' Institution has decided to join with the R.I.B.A. in representing to the Minister of Agriculture and Fisheries the extent to which the English Ordnance Survey maps were falling out of date and the urgent need for revision at more frequent intervals, particularly of areas where development had been rapidly proceeding.

THE ELECTRIC LIGHTING CONFERENCE

By HUMPHRY DEANE.

Electric lighting is at last beginning to make strides on its own legs. For too long has it been merely supplanting earlier illuminants. The fact that the lamps could safely be put in places where a naked light could not be put has only recently been generally taken advantage of. Probably one of the reasons for this is economy. For a long time after its introduction, electricity was compared with other illuminants (among other matters) on its relative cost, and the price was not as low as it now is, nor did the supply companies (with one or two exceptions) offer the terms which are now obtainable for cheap current after a minimum consumption has been guaranteed.

The whole theory of modern lighting is to illuminate the object without causing a glare to the eyes, and this can only be done by screening in some way the actual source of light by the various methods of indirect lighting. The only alternative is to put the light at such a height that it is out of any probable line of vision; even then it is usually necessary to diffuse the rays from the actual lamp by some form of semi-opaque glass. All these methods use, of course, very much more candle power than the ordinary direct lighting, but the comfort and effects obtained make it worth while if the additional cost is not too heavy. A number of buildings have recently introduced imitation windows of obscured glass with lights behind. This may be necessary or desirable in certain cases, but it should not be allowed to become too general. It should not be the object of artificial light to imitate daylight. There is something very attractive in the change-over when evening comes and it is time to draw the curtains.

If one wants to ruminate on the possibilities of future developments of external lighting, one begins to wonder whether, at any rate in shopping streets, the entire street lighting will not some day be carried on by reflection from illuminated façades and shop windows, or some such form of communal lights by agreement with the shopkeepers concerned, eliminating altogether the lamppost.

The Electric Lighting Conference, which was organised by the Lighting Service Bureau of the Electric Lamp Manufacturers' Association of Great Britain, and held at 15, Savoy-street, W.C., on March 2 and 3, was called for the purpose of enabling architects to acquaint themselves with the more recent developments in the use of light in architecture. It opened with a comparatively sparsely attended audience, unfortunately, for Dr. Walsh, of the National Physical Laboratory, gave one of the most interesting papers of the whole series. His subject was "Lighting Fundamentals," and he really got to the root of the whole question of electric lighting from the scientific point of view. He showed the different types of lighting required for different purposes and how, for instance, if there were sufficient contrasts in the colours with which one were working, a diffused light was preferable, but how, if the work had to do with a monotone which gave no light or shade of its own, it was desirable to have a direct light which created as much light and shade as possible. Another interesting fact which Dr. Walsh explained was the harm done to people's eyes by working in a dark room with a bright light focused on their work. Looking up from the light to the dark necessitated focal readjustment, which took some seconds to accomplish and caused constant strain, which was repeated on looking back to the work.

Mr. Grierson, in his excellent paper on the facilities required not only to meet the immediate electric services of all kinds but the possible future extension and "tappings" of those services, showed how necessary it is for the complete electrical installation to be considered at a very early stage of the design. He showed that, first of all, in large buildings the general lay-out and accommodation of equipment had become a considerable feature, and would become still greater as new electrical "gadgets" were introduced; secondly, the actual illumination, whether in small or large buildings, could be considered at an early stage if the best effects are to be obtained and the wiring points taken to the positions eventually required.

Practically all subjects of lighting brought back the discussion to indirect lighting. Some architects clung to the suspended or bracket fittings as lending themselves to architectural design, while the engineers held that it was impossible to get adequate general lighting from direct undiffused sources without getting glare. This surely is a matter which, in each case, must be decided by circumstances and taste, but the conference did bring out that while both engineers and architects were working on the indirect lighting principle, the engineers were trying to get an entirely even spread; while architects preferred an effect of light and shade and did not want to arrive at an illumination monotonously even over the whole area. The one essential is that the source of light should be even and not indicate by reflection or shadows the number of lamps used.

Rooms in private houses are used on different occasions, in different moods and for varied purposes, and some alternative methods of lighting are desirable. For instance, indirect lighting could be supplemented on occasion by point lights, and so on. Nor is it reasonable that all rooms in a house, even the reception rooms, should be lighted on the same principle; it is rather pleasant to move from a brilliantly lighted room to one with subdued and restful lighting; it is also stimulating to do the reverse.

The old trouble of the engineers trying to get an even light came up in the discussion of church lighting. To get an even light in a Gothic cathedral must be extremely difficult, and is wholly undesirable. Again, with flood lighting, the engineers are so careful not to upset the natural day shadows of architectural ornament that in many cases they arrive at an effect of a cardboard structure without any shadows at all, as in the case of Buckingham Palace during the Congress last September.

This first conference undoubtedly did a lot of good, and it is to be hoped that it will become an annual affair. The engineers have got to grips with their part of the work and are obviously anxious that the architects should now make use of this knowledge and direct the effects on architectural lines. To do this successfully, the architects must acquaint themselves with the data and fundamentals which the engineers have discovered, and these conferences assist the interchange of ideas enormously.

We now conclude the report, commenced in our last issue, of the Architects' Conference on Electric Lighting, arranged by the Lighting Service Bureau for the Electric Lamp Manufacturers' Association, held on March 2 and 3, at 15, Savoy-street, W.C.2.

Lighting Commercial Buildings.

The Thursday's proceedings continued with a lecture on "Lighting Requirements for Commercial Buildings," given by Mr. F. Marsh. It had been proved, he began, that lighting could, and did, improve the output of a factory operative, improved the health and accuracy of an office worker, but there was no field of commerce in which good lighting could be so closely identified with £ s. d. as it could be in the case of the shop window. As a direct proof of this, he would give the results of observation recently carried out on the number of people stopping at a shop window where the lighting was periodically increased: With 15 foot-candles, 200 people stopped each hour; with 40 foot-candles, 244 people stopped; and with 100 foot-candles, 284 stopped. That the shopkeeper appreciated the value of light was shown by the extension of after-hour lighting and the increasing uses of arcades and re-entrant windows. The modern tendency was not to restrict the advertising to the window only, but to make the whole of the front of the building an advertisement in itself. There were two principal methods: (1) Bathing the whole or part of the building in light; (2) making the whole or part of the building front luminous.

In the first case, he referred to floodlighting, and he would like to say: "Do not floodlight for the sake of floodlighting." To put it more bluntly, there were quite a number of shop buildings which were better kept dark. The other method usually consisted of applying to, or preferably, building into, the structure some kind of luminous feature. That type of thing had been done far more extensively on the Continent than in Great Britain. In Berlin there were shops whose whole front was composed of opal glass lit from behind. Provided it was carefully designed, and also that the brightness of the glass was kept sufficiently low, that method of advertising could be made extremely effective, and presented enormous scope to the designer.

Opening the discussion on the paper, Mr. P. J. Westwood, F.R.I.B.A., after proposing a very hearty vote of thanks to the E.L.M.A., and particularly to Mr. Jones and his very able staff, for the manner in which they had arranged this first conference with the architects, said that a point of importance which had arisen in connection with Mr. Marsh's and other papers was that it was necessary for an architect to seek the services of an engineer in the early stages of the design of a building—and that applied just as much to the lighting of commercial buildings as to other types of buildings. Transformers had to be installed in large buildings, and provision had to be made for them in the basement, and it was very trying for an architect, after having laid out the basement plan, to have to give 150 or 200 ft. super for the purpose of housing transformers. The problem of providing, in the first place, the ducts for the carrying of the various services was also of great importance, and it behoved the architect to call in the engineer at a very early stage, and not to wait until the roof was on. Another point he stressed was that it was a wise precaution, when one had decided upon the provision to be made for the various services to meet present-day requirements, to add another 25 or 50 per cent. to that provision, because lighting was as yet in its infancy, and it was fairly certain that it would be used more and more intensively in the future. The extra provision when the building was designed, therefore, would prove to be an economy in the long run. With regard to the lighting of the interiors of shops, he was of opinion that semi-indirect lighting was required for the most part. One could use semi-indirect, and add to it some direct lighting, building up in the various parts of a store a certain amount of architectural lighting. A system which represented the latest development in stores was to have a general system of lighting, and, in addition, to provide reflectors on the ceilings at points over the counters, where the business was actually being done. The light given was pleasing, and there was a wide spread of light at the bottom. He looked forward to the time when it would be possible to buy what he referred to as a beam of light, or a "4 by 2" of light, without being troubled with the fittings. He wanted to get away from systems which involved the use of dozens of small units, each of which had to be fitted into a holder.

Mr. Percy L. Marks entered a plea that all artistic architects and shopkeepers should use restraint instead of luxuriance, both in the display of goods and in lighting. Some

of the best of our shops exhibited only very few goods in the windows to indicate what was inside, so enhancing, in his view, the value of the goods kept within and inviting people to enter, instead of attempting to put all the goods "at the top of the basket," as though there were nothing left underneath. Commenting on the remark of Mr. Marah that it was better to keep certain buildings dark than to floodlight them, he said it could hardly be expected that any architect would be prepared to consider his building unworthy of floodlighting.

Modern Tendencies in Lighting.

There followed a lecture on "Modern Tendencies in the Lighting of Theatres, Hotels, Restaurants and Exhibitions," by Mr. Howard Robertson, F.R.I.B.A., S.A.D.G., who said that he divided the question of lighting, and particularly the lighting of amusement buildings, such as theatres, restaurants, exhibitions, etc., into four divisions. The first was the question of what the light was for. Obviously, in the first place, light was generally used for illumination, but it might be used purely for decoration, without any thought of its value as an illuminant. A case in point was that of neon lighting, which was at present used in most cases for decorative purposes; the light obtained from a luminous gas tube was not important. The second aspect was that of advertising, the decoration being introduced as an aid to the advertisement. First place was given to the publicity, and if it could be arranged artistically, so much the better. But if one could not do it artistically, one could still use the light for advertising purposes. In connection with the use of illumination for actual lighting, there arose another capital question, of whether one was going to treat artificial light as something quite different from daylight, or going to try to imitate daylight effects. He thought most architects would agree that it was much preferable to treat artificial lighting as something which would produce effects in direct contrast to the effects of daylight. Most architects felt that in all designs there should be contrast, that there should be light and shade or black and white, that with daylight and artificial light we were getting two different things, and that it was a great mistake in the majority of cases to view the problem of artificial illumination from the standpoint of reproducing as perfectly as possible the effects of daylight. When one entered a room in the evening one obtained an entirely different sense of well-being or discomfort, whichever it might be, than when entering the room in the daylight. One was in a different mood in the evening, and very often in a different dress. Therefore, the problem of evening lighting was something quite distinct, and he could only visualise artificial daylight for purely utilitarian use, as, for instance, in the large ledger office of Lloyds Bank in Cornhill, arranged by Sir John Burnet, Tait and Lorne. There one had an excellent room in which clerks had to work all day, but they did not wish to be continually under the impression of being under-lit, and away from the daylight. That room had windows through which there was provided a near approach to artificial daylight. But the result was only reasonably pleasant; it was a kind of daylight, but it was that slightly blue daylight which nobody really liked if anything better could be obtained.

The third aspect of the light problem was that of external lighting, which applied to all the types of buildings he had to deal with. We had to consider the development which had taken place in external lighting, particularly floodlighting, and to realise that although floodlighting on a large scale was a comparatively recent development, yet even so it was no longer as dramatic as it was. He felt that in the future floodlighting effects on buildings had to be considered in exactly the same way as an architect considered the design of a building which he was to erect, from the point of view of the neighbouring buildings, the town plan, and so on. The natural sequence of thought there was that in the future we should not be able to content ourselves, in connection with the external lighting of buildings, merely with the services of the illuminating engineer. He considered that the artist had to step in, and that the design of external lighting had to be considered in the preliminary drawings and sketches, and the tone and colour effects would have to be dealt with in connection with lighting in exactly the same way as in the design of a façade. In other words, there was the daytime and the night-time study of the façade.

His fourth point was the divorce which still existed between the illuminating engineer and the architect. It was not a divorce due to ill-will or lack of willingness to co-operate, but a divorce which arose from a still lingering difference in their points of view. It seemed to him that the idea of the illuminating engineer, as set forth by the majority of the speakers on a recent occasion when the matter came up for discussion, was to light a church as perfectly as possible from the utility point of view. If one floodlit a cathedral perfectly, so that every join in the roof could be seen, one would kill the interest of that cathedral.

The lecturer then exhibited and discussed some examples of interior and exterior lighting of the types of buildings with which he was dealing. In the course of his remarks he remarked that electrical apparatus manufacturers were amongst the most tasteless of the furnishers of architects' materials. They had not thought out the organisation of showrooms as did manufacturers in France and Germany. Among the lighting installations in theatres, etc., the speaker mentioned the lighting at the New Victoria Cinema, which appeared to him to mark a great advance in lighting; and he also showed a photograph of "double cornice" lighting in a corridor at the Titania in Berlin. This latter was effected by a trough along the centre of the ceiling, the light being reflected therefrom to the curved ceiling on each side, and he described the result as almost perfect illumination. Commenting on cornice lighting, he said that it was sometimes resorted to in cases where the height was not sufficient to render it really successful. The ceilings were sometimes so low that the reflected lighting was worrying to those passing beneath it.

In connection with some examples of lighting in hotels and restaurants, it was pointed out by the speaker that the semi-indirect lighting fittings had not disappeared, and, in his opinion, they would not disappear completely in many cases, because if everything was lighted indirectly one lost the element of local brightness and contrast. That could be an intensely decorative element. In a reference to architectural forms built up of light, he said that perhaps it had its uses, but he doubted if whole rooms would be illuminated by luminous columns, modillions, and such features.

In the discussion which followed, Mr. R. A. Duncan, A.R.I.B.A., said that the point which had impressed him most was that there was available a new building "material," and that was lighting; obviously this was going to have just as great an effect as steel had had upon building tradition. He agreed with Mr. Robertson's objections to the use of illuminated structural forms, but his point was that surfaces to be illuminated would be considered in a manner quite different from that in which they had been considered in the past. One of the factors which entered into design, and which was very important, was that of psychology. The psychology of light and the effect of light was very important in design. For that reason we should probably retain visible fittings; light had to be considered not only as an illuminant; we must consider its quality and colour, having regard to the psychological effect on the persons who were to come into contact with it, and that was a problem which had hardly yet been dealt with.

Mr. T. P. Bennett, discussing some of the practical points concerning the use of light which would have to be borne in mind in connection with design, said that in the first place it seemed beyond doubt that any type of lighting by indirect means entirely was more costly than direct lighting, assuming the same quantity of light was to be provided. Those responsible for the management of large buildings did consider seriously the weekly lighting bill. Another matter of the greatest importance in connection with the lighting of hotels, theatres, etc., was that the lighting must make the women look attractive. This was not merely a joke, but was of paramount importance to a restaurateur, who insisted that the lighting should be such as to ensure that the women visitors looked their best. Many restaurateurs regarded lay lighting as impossible, because very few people looked well when the lighting was directed to them from above; it tended to cast shadows on their faces and made them look older, so that women avoided restaurants which were illuminated by such means.

Another important matter which he had hoped Mr. Robertson would have dealt with was that of the use of coloured lights in theatres and restaurants. There was a great deal to be said for coloured lighting from the point of view of decoration, but one had also to avoid certain dangers in its application. Designers would have to tackle the problem of the effect of superimposed colours, and they would need the assistance of physicists and optical men in deciding what was likely to happen if, for example, green light were thrown on to a pink wall.

The Conference closed with the putting of a resolution: "That this Conference recommends the establishment of a Lighting Committee consisting of representatives of the architectural profession and the E.L.M.A. Lighting Service Bureau, to discuss periodically lighting data and lighting practice," which was passed unanimously.

WEST YORKSHIRE SOCIETY OF ARCHITECTS

Students' Evening.

Associate Members of this Society held a "Students' Evening" on March 10 at the Leeds College of Art, when the recently submitted prize drawings for the R.I.B.A. competitions were exhibited on the screen and criticised by Mr. Joseph Addison, principal of the Leeds School of Architecture. The designs shown included those submitted for the Soane Medallion, Tite, Measured Drawings, Arthur Cates, Grissell and Owen Jones prizes.

Mr. Addison entered into an exhaustive examination of the merits and defects of the various efforts, in order, he said, to encourage the students in the work they were engaged upon. The Soane designs for a national library were compared with actual buildings of a like nature already existing in this country and in other parts of the world. The different manners in which the stacking of the books and their accessibility to and from the delivery counters had been achieved more or less successfully were pointed out. The remaining drawings likewise received considered criticism, and students were advised not to be led away by the lure of grandiose effects, but to allow the building to take its appropriate lines in a common-sense manner.

Mr. F. Johnson, in moving a vote of thanks to the demonstrator, said he thought the conclusion they might come to was that genius was not necessary in preparing projects of such nature, and that what they required was a little common-sense in dealing with the problems to be solved.

Mr. Norman Culley (President) said he thought that Mr. Addison's criticisms of the designs were more truly searching than those officially promulgated by the Institute assessors, and added that he, personally, did not agree with the Tite prize award. He expressed unbounded admiration for Mr. Cyril Brown's measured drawings of St. Paul's Cathedral.

QUASI-ARBITRATORS

By W. T. CRESWELL, Barrister-at-Law, Hon. A.R.I.B.A., A.S.I., etc.

Quite recently, in touching upon this subject in an article, we stated that it is the duty of a quasi-arbitrator, *as distinct from an arbitrator proper*, to act impartially *so far as his natural bias in favour of his employer will permit;* and that he must apply his practical knowledge of the facts and decide accordingly. We quoted several legal cases in support of this contention. There are other cases which would on first consideration appear to be in conflict with them. For instance, in the case of Cross *v.* Leeds Corporation (1902, 2 H.B.C. 339), which was in respect to a contract under which the engineer to the Corporation was quasi-arbitrator, it was said "a strong man forming an opinion and acting on it, and if needs be expressing it, does not negative his right, for the reasons I have already pointed out, to act as an arbitrator afterwards." In the above case the engineer to the Corporation had written a letter in which he said that the claim of the contractor against the Corporation was "outrageous" and on the contractor bringing an action against the Corporation it was held that the engineer was not disqualified from acting as quasi-arbitrator. Collins, M.R., said :—

"The parties have not agreed—that is the plain English of it—for an *impartial* arbitrator, because the person they have agreed upon as arbitrator is one whom it may be pre-supposed may have formed to the best of his ability, and with all the information that was at hand, an adverse opinion to one of the parties on the points in dispute. You begin the discussion with that; but, nevertheless, because these contractors (as well as employers) know perfectly well what they are about, and assent to this clause for very good reasons, they cannot come afterwards and complain of the very thing which they have agreed to, namely, that the person who is now asked to act as arbitrator has expressed, and strongly expressed, an opinion as to a particular contention which they are now setting forth. It was a condition of the very existence of the matter that he was to be the person to whom the matter was to be referred; and that there would be nothing for them to raise an arbitration about unless he had given an adverse opinion to them. That is the first step in the discussion. You have got to introduce something more than that; you have got to introduce something (it is very difficult to draw the line short of dishonesty), it may be that something even short of dishonesty, as, for instance, if there is perverse conduct, and refusal to treat the matter at all, or where it is said, 'I will not bring, as far as my human infirmities enable me to do so, an impartial mind to bear on the matter which I have already decided,' but unless you get something amounting to that you get nowhere at all."

The last words are important, for, in our opinion, they imply that a quasi-arbitrator (such as the architect under the contract made such) must still have an attitude of impartiality and independence at the hearing and conduct it and hear all evidence with unquestionable fairness, and have his own mind open throughout. Because it is unquestionable that the essence of an arbitration is that of a judicial inquiry, and that nothing less or more was intended by the parties in signing the contract. Emphatically it is not a fulfilment of the contractual function of an architect or engineer established also as quasi-arbitrator, to decide any point of dispute *in a mere interview with the contractor* who has raised a dispute about it. It is obvious that in such an interview the architect or engineer is acting only as the agent of the employer, and possibly with precipitous decision and pulling for the employer up to the last limit of honesty. Possibly he may even be relying on some legal principle applied unfairly, or one which the Courts might reverse in the particular circumstances or in a strained endeavour to surmount some difficulty which has arisen. But when his function as quasi-arbitrator is called into action, and he sits as a judicial tribunal, and witnesses are ranged before him and are speaking subject to cross-examination, the very atmosphere of such an occasion will tighten up the conscience of a man of high principle, such as he is taken to be, and the psychological effect must be that of ensuring that his mind is actually open to conviction, rendering it less biased, and the contractor will get his fair chance at least within the limits of the contract he has entered into.

If it is supposed that the effect of such a contract would deprive the contractor of the right to a judicial inquiry held by the quasi-arbitrator, or that it would encourage a quasi-arbitrator to give final decisions off-hand, it is against public good and neither of the parties should enter into it.

SOCIETIES AND INSTITUTIONS

R.I.B.A.

At a Council meeting of the R.I.B.A. held on Monday, March 7, the following members were elected :—

AS FELLOWS.

J. Dovaston.
C. H. Gale.
H. F. Walker.
H. A. Welch.
J. A. Hoogterp.

AS ASSOCIATES.

W. H. Allen.
A. R. F. Anderson.
J. W. H. Barnes.
C. S. Bevan.
J. D. Carnegie.
E. L. W. Davies.
A. L. Dotto.
N. M. Eaton.
C. L. Fairless.
G. Fairweather.
E. C. Gilham.
D. E. Harding.
G. J. W. Haswell.
J. K. Hicks.
F. W. Holder.
G. V. Huddy.
G. H. Jackson.
G. E. P. Jackson.
L. S. Jacobson.
S. Kershaw.
G. Q. Lay.
A. H. Livingstone.
J. W. MacDonald.
A. R. Mackness.
J. S. Marsh.
F. N. Mauldon.
L. H. Parsons.
C. T. Penn.
R. L. Phillips.
I. F. B. Richards.
S. M. Richmond.
W. Scott.
A. J. Sedcole.
D. R. Smith.
A. J. Steel.
A. A. Stewart.
R. P. Watson.
C. E. Westmoreland.
J. M. Whalley.
G. Wood.

AS LICENTIATES.

W. S. Backhouse.
A. Barnabas.
H. G. W. Brinsley
A. Bromly.
J. C. Bruty.
J. G. Callender.
A. K. Clark.
J. J. Cotten.
W. L. R. Crumblehulme.
H. E. F. Damen.
N. Dean.
G. B. Deas.
A. Drake.
J. H. Ferrie.
J. G. Flatman.
L. M. Geers.
Sheikh A. Hamid.
E. H. Harvey.
J. T. Jones.
R. Kenworthy.
E. G. S. Newman.
A. L. F. Pegg.
C. L. Pepper.
C. H. Petty.
F. W. Pexton.
G. Raymond.
A. L. Rogers.
H. Smith.
W. H. Stewart.
A. W. Tippetts.

UNIVERSITY COLLEGE, LONDON.

The Annual Report of the Committee of University College, London, for the year ending in February, 1932, has just been issued. The number of students on the books of the College last session, it is stated, was 3,225; 2,503 came from the British Isles, 319 from different parts of the Empire overseas, 281 from various countries in Europe, and 122 from countries outside Europe, of whom 47 came from the United States of America. The College has for many years taken an active part in promoting adult education by providing public lectures that are open without fee. Over 14,000 persons attended these lectures during the Session 1930-31, the approximate aggregate number of attendances being 30,500.

An addition to the College buildings has been made by the completion of the new Ramsay Memorial Laboratory of Chemical Engineering, which was opened by H.R.H. Prince George last November. It has accommodation for fifty students and research workers and is the first laboratory in this country to be designed and built specifically for chemical engineering teaching and research. A further extension of the College site has been effected by the acquisition of a portion of the property immediately south of the College, known as Upper Gower-mews. It includes buildings with a floor space of more than 100,000 square feet, admirably fitted for adaptation to the use of scientific departments. The Department of Zoology and Comparative Anatomy will, with the aid of a special grant of £30,000 made for the purpose by the Court of the University, be re-housed and re-equipped as speedily as possible in one section of these buildings. In close association with this, a munificent appropriation has been made by the Rockefeller Foundation of New York, amounting to £88,000, for the development of research in the Department of Zoology and Comparative Anatomy.

THE INSTITUTION OF STRUCTURAL ENGINEERS.

Below we give the results of the Associate-Membership and Graduateship Examinations of this Institution, which took place in December, 1931. Thirteen candidates were successful in the Graduateship Examination, and thirty-two in the Associate-Membership Examination. The names of the successful candidates are as follows :—

Graduateship Examination. — Muzaffar Ahmad, T. H. Carden, H. E. Cartwright, H. G. Castleman, F. C. Doherty, G. A. Ivereigh, Kasturi Lal Sahani, W. C. Keen, K. Padmanabha Iyer, D. Lax, L. Chandra Mowli, J. D. West, L. Paterson Wheeler.

Associate-Membership Examination.—H. T. Avey, Bakshi Ram Sinha, J. Bow Campbell, T. H. Carden, K. Collinson, D. G. Dimond, G. Drake, R. P. Haines, S. Howell, D. S. Jones, Prabhu Datt Joshi, K. Padmanabha Iyer, Amar Nath Kashyap, Kasi Govinda Sarma, D. Lax, C. V. Lloyd, C. E. F. Madeley, U. S. Manel, J. H. Marais, N. P. Mathur, J. W. Meredith, D. M. Meynell, S. R. Naidu, T. O'Donnell, L. A. Patel, V. A. Rangarajan, K. S. Shamanna, Seshagiri Rao, F. Valentine, F. Walker, J. H. Watson, D. Whyte.

MAIDSTONE ART AND CRAFTS SOCIETY.

An interesting meeting of this Society was held on Wednesday, March 2, when the programme took the form of a series of short informal addresses by members of the Society.

The first paper was read by Mrs. Herbert Green, on "Scrap Books."

Mr. S. H. Loweth, F.R.I.B.A., then gave a talk on "The Buildings on the Acropolis," and showed some interesting lantern slides and plans of the buildings. Owing to lack of time, he devoted himself chiefly to the Parthenon, and explained the refinements of Greek planning and construction in regard to the columns, stylobate and entablature of the temple. He then put forth some interesting theories regarding the lighting of the Parthenon, and described in detail the sculpture and bas-reliefs of the building, drawing attention to the maximum effect of shadow with the minimum of relief. In passing, the lecturer said it would be a good thing if English architects remembered more frequently that shallow carving is only possible in countries where there is strong sunlight and did not try to emulate, with such poor results, Greek design in this grey and gloomy country.

The next talk was on the subject of "Linocuts," by Miss Dorothy Goodwin, who exhibited some of her own work, both the lino blocks and the finished prints. Mr. Cyril Day then gave an instructive talk on "The Manufacture of Table Glass." About fifty members of the Society were present.

LAW REPORT

CHANCERY DIVISION.

Before MR. JUSTICE MAUGHAM.

OBSTRUCTION OF ANCIENT LIGHTS.

The Sheffield Masonic Hall Co., Ltd. *v.* Sheffield Corporation.

This was an action by the Sheffield Masonic Hall Co., Ltd., against the Sheffield Corporation for an injunction restraining the Corporation from obstructing the plaintiffs' lights by the erection of a building opposite the plaintiffs' hall in Surrey-street, Sheffield. In the alternative the plaintiffs claimed damages.

By their defence the Corporation pleaded that their new building would not obstruct the plaintiffs' lights and said that any reduction in the height of their new building would necessitate complete redesigning and reconstruction.

Mr. Vaisey, K.C., and Mr. Riviere appeared for the plaintiffs, and Mr. Morton, K.C., and Mr. Othwall for the defendants.

For the plaintiffs, it was stated that they were an ordinary commercial concern and that the shareholders were not all Freemasons. Plaintiffs' premises were on the south side of Surrey-street, Sheffield, part of them having been built in 1876 and the remaining portion in 1887. Surrey-street was built 40 ft. wide, and the defendants' building, of which the plaintiffs complained, was called the New Sheffield Art Gallery and was opposite the Masonic Hall and would be 65 ft. high when completed all along, except for the centre portion, which would be a few feet higher. Plaintiffs said that this was slightly higher than the old building which originally stood there. Plaintiffs complained that the result would be that the new buildings would seriously interfere with the lighting of their rooms and would diminish the value of their premises by something like £3,000.

Mr. Riviere said it had been suggested that his clients all along had been "out" for nothing but money, but, as a matter of fact, all they sought was to prevent obstruction of their light.

The witnesses for the plaintiffs were Mr. C. B. Flockton, F.R.I.B.A., and Mr. Winyard Dixon, with Mr. John Swarbrick, F.R.I.B.A., as light specialist; and for the defendants, Mr. W. G. Davies, F.R.I.B.A., Mr. B. J. Turner, F.S.I., with Mr. P. J. Waldram, F.S.I., as light specialist.

Defendants' case was that the obstruction of light to the plaintiffs' buildings by their new buildings was negligible, and a witness put the amount in damages at £103.

Mr. Waldram, for defendants, expressed the opinion that the new building would not depreciate the value of the plaintiffs' buildings one penny. He admitted that the light coming to some of the plaintiffs' rooms would be affected, but there would remain sufficient light for all ordinary purposes.

His lordship, in giving judgment, said the plaintiffs were a limited company and owners of a building called the Masonic Hall, and they claimed an injunction to restrain the further erection of buildings now in course of erection by the defendants, being a big and important building intended to be used for a library and art gallery, such buildings taking the place of two old buildings known as the Central Lending Library and Central Reference Library—buildings which were separated by an open space 64 ft. in width.

Originally the plaintiffs launched a motion and filed affidavits for an interim injunction, but did not press for such relief.

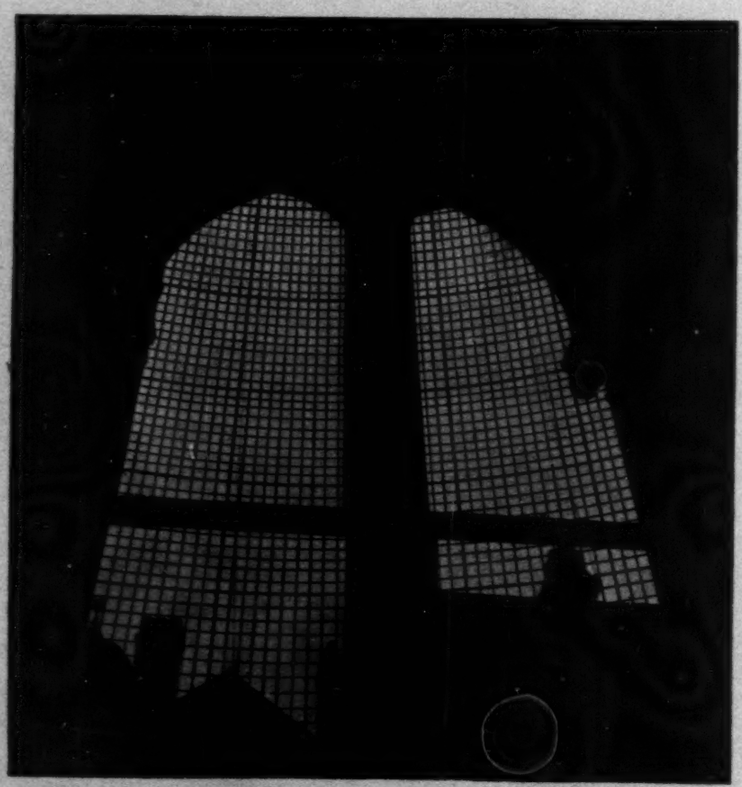
The defendants had continued their building and the matter then came on for trial. He had to ask counsel for the plaintiffs whether they insisted on their right to an injunction or whether they were content to have the damages assessed on the terms that the defendants' building was to be completed. It had become apparent that the defendants' building would be a great public improvement, and plaintiffs were therefore loth to put themselves in the position of insisting on the injunction to restrain the erection of the building by asking for an order which would have resulted in the plans for a dignified structure being sadly deteriorated as the result of an order of the Court. Under these circumstances the Court would be loth to grant an injunction here, and plaintiffs had not sought to persuade him that the case was one for an injunction. His lordship had therefore to assess the damages on the material before him.

Proceeding, his lordship said the rooms of which complaint were made were exceptionally well lighted rooms. All the windows in the plaintiffs' buildings which he had to consider were admitted to be ancient lights. The plaintiffs' building was somewhere between 40 and 50 ft. in height, whilst the defendants' old buildings were 64 ft. and 40 ft. in height. The fine new buildings of the defendants were roughly 65 ft. high, except that in the centre of the building there would be a portion which would rise to a height of 70 ft. or thereabouts, and, of course, the open space in the centre had already entirely disappeared. Surrey-street he considered a business thoroughfare and would become the seat of offices. He did not accept the view that the Masonic Hall could only be used for Masonic activity, but he adopted the view that the plaintiffs could turn the building into business premises, as it was in the centre of an improving trade neighbourhood.

Experts had expressed wide differences as to the value of the plaintiffs' premises. The plaintiffs put the annual value of their buildings at £1,100 and the capital value at between £17,000 and £18,000. For the defendants, the annual value of the building was put at £378 and the capital value at £6,000. In his lordship's opinion the correct figure of value of the plaintiffs' premises was more or less midway between the figures given by the witnesses on both sides. With regard to the open space between the old buildings of the defendants, the plaintiffs had no right to expect that that could be preserved as an open space. He thought it was a mistake to suppose that, having regard to the large amount of light coming to the eastern windows of the plaintiffs' dining-room, the defendants were entitled to build as high as their buildings in Surrey-street. The result of that view was to qualify to some extent the evidence given on behalf of the defendants that the dining-room was now perfectly well lighted, and led him to the conclusion that he ought to accept the evidence of the plaintiffs that the defendants' buildings would obscure the light of that room and would render it less useful for the purposes for which it was now used or might be used in the future.

It was impossible to measure exactly the amount of damage which would be suffered in such a case of the illegal obstruction of light caused by the defendants' buildings as a whole. All one could do was to take into account all the facts of the case and weigh the evidence on both sides, and try to arrive at a fair conclusion on the matter. It might be described as a guess, but it was a judicial guess. On the whole, the conclusion at which his lordship arrived was that the amount of damage suffered by the plaintiffs was £750, and he entered judgment for the plaintiffs for that amount, with costs.

[In this case, we are informed that, at the request of counsel, Mr. Swarbrick exhibited to Mr. Justice Maugham his daylight factor theodolite, which has been illustrated and described in *The Builder*. Further particulars relating to it also appeared in a report of Mr. A. C. Stevenson's paper, read before the International Illumination Congress at Glasgow last year. In this report reference was made to the fact that by means of this instrument it is possible to dispense with the use of the calculating sheets that have hitherto been used, when working under the older methods. The method of dispensing with these sheets relies upon the use of daylight factor grilles. These, we understand, have been in use for some time, and have been used in connection with right of light cases. We illustrate a photograph with one of these grilles superimposed upon it. This form of grille is used for measuring light on the horizontal plane. Each rectangle represents an equal unit of illumination on that plane. A whole range of grilles of this kind have been constructed for use in measuring light on both the vertical and horizontal planes.]



View showing use of Daylight Factor Grille.

AN UNREALISED LIABILITY

In a recent issue, a correspondent drew attention to what he termed "an unrealised liability" which might be incurred by builders and plumbers owing to negligent acts of their servants, and we drew attention to this question in a note headed "Builders' Liabilities" in our issue for November 23, 1928, in connection with a decision of a county court judge, where a builder was held liable, up to the county court limit, for damage caused to a house by water, the negligence complained of being delay in sending a man to turn off the water at the stop-cock in breach of an alleged promise made over the telephone to send up immediately. In our issue for December 28, 1928, we also drew attention to a case, Brook *v.* Bool (1928, 2 K.B. 578), where the landlord of a shop, who had undertaken to visit the shop at times after the plaintiff, his tenant, had left at night, to see that all was right, was held liable for the act of a lodger, who had assisted him, for negligence in inspecting an escape of gas. The lodger was held to be an agent acting under the defendant's control. These appear the two latest decisions touching upon this question.

Of course, the liability for the acts of servants is limited to acts performed by them in the scope of their employment, and does not extend to acts negligent in their nature quite outside the duties they are employed to perform, but the instance our correspondent gives of a workman employed by a plumber leaving a candle burning in the roof of a building would clearly fall within the rule of law that the negligent act must be performed within the scope of the employment. A number of houses are destroyed by fire in course of construction, but cases where the cause is traced to negligence of the workmen employed appear very rare. This may be due to the difficulty of tracing the origin of fires, especially when the damage done is very extensive, but the liability is none the less there and very real, and in a clear case the insurers of the owner of the house might well seek indemnity as against the master of the negligent servant, and, of course, apart from insurance, there is nothing to prevent an owner from himself instituting proceedings against the employer.

The rarity of the cases traced to such acts of negligence, coupled with the fact that out of the vast number of houses on which work is undertaken every day very few are injured by fire, which is the most serious of the risks incurred, seem to indicate that premiums on this class of insurance should be placed at a low rate, for the risk in each individual case is comparatively small, and, if this is not the case, it is probably due to lack of demand, builders and plumbers having ignored this risk. If we are correct in these assumptions, it appears to be a matter for organised action on the part of those engaged in these industries, so that by increased demand policies at moderate premiums might be issued against such risks.

The main difficulty, however, arises in the amount to be insured against, as an employer in a small way of business may well on occasion be called upon to send workmen to perform work on buildings of any size, as our correspondent points out, but in such cases, perhaps, the risk may be discounted, for, as a rule, property owners have fully insured their buildings and would claim against their insurers, and any claim against the employer would, in fact, be made by those insurers to whom the insured's rights are subrogated, and it is unlikely that any insurance company or body of underwriters would take proceedings unless they were assured of the financial capacity of the person sued to meet the claim. Where, however, a building was insured, but not for its full value, and the building burnt down by the alleged negligence of servants of a municipal corporation, it was held on the owner undertaking to sue for the whole amount of damage that he might be allowed to conduct the action without the intervention of the insurers, but would be liable for anything done by him in violation of any equitable duty towards the insurers (Commercial Union Assurance Company *v* Lister, 9 Ch. 483). Apart from the big risks we have indicated above, it must be only prudent for every employer at least to insure against such risks as are ordinarily incident to the class of work which he undertakes, the sum insured having a relation to the class of building his employees are likely to be engaged upon.

AMERICAN REAL ESTATE

WAGE CUTS IN THE BUILDING TRADE.

FROM AN AMERICAN CORRESPONDENT.

ECONOMIC seers of America, watching for the dawn of prosperity after the unusually prolonged depression, are turning their eyes towards real estate. Cheap money has failed them as an index. Rock-bottom commodity prices have apparently lost significance as an index; and, inasmuch as real estate values have been historically the last to show recovery from depressed levels, attention is now being focused in that field by general observers as well as those more directly interested.

From the construction point of view, it appears to be agreed that wages for the various trades employed is the key; and in that department it is announced from New York that employers will ask the trade unions concerned at the expiry of their current agreement, April 30, to take 25 per cent. wage reductions.

The immediate situation is summarised as follows, with particular reference to New York, although similar conditions are, in varying degree, prevalent throughout the United States: Building activity is expected to be lower in 1932 than in 1931; only limited amounts of first mortgage money are available, and only for high ranking propositions; second mortgage money is virtually unobtainable; every community has an abundance of houses for sale, and there is far from a shortage of apartments. There is also a surplus of store and office accommodation available; and, finally, construction of public works may be expected to show abatement, inasmuch as public protests against increased taxes are daily mounting, spurred on materially by weighty protests from such financial leaders as bank presidents, officials of insurance companies, and other heads in heavy investing corporations.

At the same time, observers see in the whole real estate and building field a distinct beam of sunshine. It consists in the early emergence of a large number of buildings with materially reduced overhead charges, which will result in the stabilisation of rentals at lower levels. Out of that situation will grow a more active and stable market for real estate propositions, and thus will be laid, in the early future, the foundation for a new era of prosperity in this field, these manifestations at the same time signalising the end of the general economic depression. In other words, when real estate values, including rentals, have been thoroughly liquidated, stability in this department of business will mean that general prosperity is not merely "just round the corner," but actually standing on the doorstep of the world.

On that theory, leading estate men in New York are of the opinion that a period of estate accumulation is close at hand, especially on the part of the investor who is shrewd enough to buy before the crowd. Here again, the cost of reproduction is a factor, but the possiblity of wage reductions this spring gives promise of taking care of that situation.

IN PARLIAMENT

Unemployed Woodworkers.

MR. STONES asked the Minister of Labour if he would say how many joiners and general woodworkers were to-day registered as unemployed in this country.

SIR HENRY BETTERTON said that separate figures for general woodworkers were not available. The following table showed the number of insured carpenters and joiners in the building industry, and of all insured persons in certain groups of woodworking industries, recorded as unemployed in Great Britain at February 22, 1932 :—

Industry.	Number.
Building industry : carpenters and joiners	37,830
Sawmilling and machined woodwork : all occupations	12,496
Furniture making, upholstering, etc. : all occupations	28,693
Wood boxes and packing cases : all occupations	3,578
Miscellaneous woodworking industries : all occupations	5,037

The figures for industries other than the building industry included a number of occupations other than those related to woodworking.

The Haig Statue.

LIEUTENANT-COLONEL MOORE asked the First Commissioner of Works if he could now state on what date it was anticipated that the statue of Field-Marshal Earl Haig would be erected in Whitehall.

MR. ORMSBY-GORE said that under the terms of the contract entered into with the sculptor the memorial should be ready for erection in the summer of 1934.

Town and Country Planning Bill.

Standing Committee A are continuing their consideration of this Bill, and on Clause 10 (interim development orders), Mr. Train, a Unionist Member, moved an amendment providing that, failing agreement as to the amount, if any, payable for damage by reason of an application for permission to develop land being refused, or granted subject to conditions, the matter in dispute should be determined by an official arbitrator.

SIR T. INSKIP, the Attorney-General, said that if the Committee passed the amendment they would present the lawyers with a nice bundle of litigation. The proposal to send the matter to an official arbitrator was really not consistent with the way the clause was drafted, nor were the proposals of the members themselves.

The amendment was negatived.

MR. TRAIN moved the omission of the sub-clauses of Clause 10, which empower town-planning authorities, with the consent of the Minister, to suspend the operations of local Acts of Parliament, by-laws and regulations in so far as these might interfere with interim schemes of town-planning.

SIR E. HILTON YOUNG, in resisting the amendment, said he was as jealous as anybody for the authority of Parliament, but there was a great difference in status between local and general acts. He would have a proposal to make at a later stage in regard to the preservation of the authority of Parliament in general Acts. The effect of the sub-clauses which it was proposed to omit would be to help landowners who were affected by interim schemes. Ninety-nine per cent. of the cases in which the suspension would be exercised would relate to building lines and width of streets; they would make for economy and save the pockets of the landowners. The enormous complexity of the system of local Acts presented an insuperable obstacle to town-planning unless some such powers as were proposed in the Bill were given to the local town-planning authorities.

MR. TRAIN, in view of the statement of the Minister, withdrew his amendment.

SIR E. HILTON YOUNG accepted, and the Committee agreed to, an amendment moved by Sir H. Cautley to provide that no Order should be made under any scheme suspending the London Squares Preservation Act.

THE BATHROOM AND ITS EQUIPMENT

The second lunch of the Design and Industries Association, held on Tuesday at Gatti's Restaurant, was devoted to consideration of the "Bathroom and Its Equipment." Mr. Frank Pick occupied the chair.

Mr. J. R. Venning, who discussed the subject from the point of view of fitness for purpose, said that it had been stated, perhaps with some truth, that we, as a country, had received considerable inspiration in the design of sanitary fittings from foreign countries, but it should be borne in mind that they were perhaps less hampered by restrictions than we were, and they were permitted to develop their ideas along progressive lines. Another restrictive factor was that we made no allowance in this country for plumbing voids or cavities, as was done in American apartment houses, around which all bathrooms and equipment centred, rendering access to pipes, both waste and services, a comparatively simple matter. In this country of private houses and villas there could be no plumbing voids and access to such pipes had to be obtained from without. The development of loose panel baths was more in keeping with British requirements and building construction. As to water-closets, generally the maximum flush that was allowed by most water companies was two gallons, which meant that the closet was often flushed twice each time it was used. It was an open question whether companies would not save water by allowing 3-gallon cisterns to be fixed.

Miss E. M. Denby (Sec. Kensington Housing Trust) related some of the experiences of that Trust. The bath, she said, could be put in the scullery or combined with the water-closet. If it was put in the scullery it saved £10 or £12 per dwelling, although perhaps it was best combined with the w.c. Economy in obtaining hot water was very necessary, and their experience was that the best plan was to have a combination stove that provided the living-room with its fire, supplied the hot water, and had an oven attached for cooking. The Trust did not find it necessary to put in a lavatory basin, especially as it added about £6 to the cost. The bathroom interior, she thought, should be painted throughout in some cheerful colour which had a glossy surface and the floor should be of quarry tiles.

Mr. Robert Atkinson, F.R.I.B.A., speaking on the subject of fittings, said that the trade had not yet discarded the patterns with which they first commenced business 30, 40 or 50 years ago. The American patterns, which were admittedly better, had been in use in this country 12 or 14 years, and yet they were still imported. Why?

The speaker then described a bathroom he had seen illustrated—complete with leaded windows, long and narrow bath set up on claw-and-ball Chippendale feet, and a tombstone of a lavatory basin laid flat supported by cabriole legs—and from that drew the conclusion that the bathroom mentality was not yet fully born. For one decent bathroom there were ten still fitted as the one he had described. It appeared that new patterns cost too much to make and were therefore not encouraged.

Every reasonable-sized house should have two bathrooms. One way of achieving that would be by having the second bath, say, 4 ft. 6 in. in length—and by fitting this bath in a recess. Plumbing, continued the speaker, was out of date. Why not copper piping instead of the intractable lead? Some form of standardised fittings could then be generally used. Again, w.c.s with low-down tanks had many advantages, yet the Water Boards debarred them. As to decoration, the cheaper bathroom still strove to look like a cold storage room or a pantry. Could we not contrive a warm and pleasant appearance, with rubber, cork or patent board walls, or pleasantly painted walls? What was wrong with the bathroom was that we still catered for the rich and not for the poor.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

QUESTIONS.

Snow Driven Through Plain Tiling.

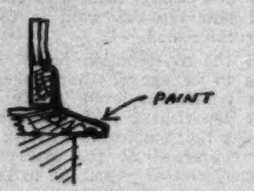
Sir,—During an exceptional blizzard recently a little snow was driven between plain tiles on an exposed roof, and, on melting, stained the ceilings below. Would the lining of the roof, with suitable material fixed beneath the rafters, cause any tendency for the wind to lift or strip the tiles owing to eddies or "rebounds" in the enclosed space which would be formed? Has any reader actual experience of such a remedy? I know torching is the desirable thing, but it is too costly, and difficult to carry out in a completed and occupied house.

Rexor.

Rain, and Fixed or "Dead" Casement Lights.

Sir,—After waiting a few weeks for possible further replies to my recent query, I find only one correspondent who appears to have grasped the problem—he who recommended taking out the fixed sashes and bedding them back in white lead. Does anyone know a better material for such bedding, such as one of the numerous slightly elastic mastics?

The strange features of this problem are that (1) rain without wind causes no trouble; (2) rain with high wind causes water to enter



at bottom of light (apparently between the rail and the wood sill) in larger quantities, even though no crack is visible to the eye and a good film of oil paintwork covers the abuttal of sash and sill.

Must it be assumed that under high wind-pressure a fine crack does open in the paintwork, opposite the junction between sash and sill, though invisible normally? In the accompanying sketch the paint-films are shown as a clear black line.

Rexor.

Question of Construction.

Sir,—My letter, printed in your issue of February 26, entitled "A Question of Construction," elicited some very able replies, which were printed the following week, and for which I thank the writers. Unfortunately, however, they seem to have entirely missed the point of my suggestion (though I note a much more satisfactory answer from Captain Wheeler in your last issue). The idea was to design a brick wall which would be cheaper than a 9-in. bonded wall and at the same time slightly superior in point of dryness.

To effect this I proposed two 4½-in. walls, the outer in stocks or facing bricks, the inner in Flettons, tied together with galvanised ties, but not bonded with headers, and having no cavity. This is, of course, a compromise between the solid bonded wall and the cavity wall, and is, I submit, cheaper than either, without serious loss of efficiency. It would, in fact, be dryer than a bonded wall, as headers are often the cause of rain penetration. I assume the use of cement mortar, since this is more impervious and no more expensive than lime mortar at present prices.

The economy of my suggested design as compared with the solid bonded wall lies in the fact that the saving of facing-brick headers (48 per square yard for English bond) more than pays for the wall-ties (at two per square yard). Comparison with the cavity wall shows a saving in the size of the building of some 4 per cent. for the same floor area. In these days 4 per cent. of real economy is worth striving for.

The real point in doubt, on which I would appreciate advice, is whether the central vertical joint should be flushed with cement mortar as a kind of vertical damp-course or left void as a small cavity. In other words, which is the better damp resister, air or cement? The Department of Scientific and Industrial Research, in a recent report, seemed to advocate a loosely built wall as likely to be more weather-resisting than one whose joints were flushed up solid. A vertical damp-course of asphalt is ruled out by its cost.

I should add that the buildings in contemplation are not dwelling-houses, but electrical sub-stations, and as such they are exempt from building by-laws. Moreover, neither absolute dryness nor great strength is required in the walls, the principal desiderata being economy in cost and good appearance.

G. F.

ANSWERS.

Fireproofing Woodwork.

[Answer to "Chartered," March 11.]

Sir,—There are quite a number of materials useful for querist's requirements, for instance, ammonia phosphate 1 part, water 2 parts, the timber being impregnated with the solution, preferably under pressure. It would then withstand the effects of fire for some time. Timber, in common with other materials, cannot be made fireproof; the best that can be done is to render it fire-resisting.

H. Allcroft.

Question of Construction.

[Answer to Captain A. G. Wheeler.]

Sir,—I am glad to learn of the success attained by the method mentioned by Captain Wheeler. This would certainly be cheaper than the alternative given by me; but my experience is that cement rendering on brickwork is liable to fracture or crack, owing to uneven settlement of the structure, whereas asphalt, from its plastic nature, would "give" considerably before failure. I would suggest, however, that "G. F." would do well to use the cavity wall, as it maintains an equable temperature inside the structure, which object would be difficult to attain with any form of solid wall.

H. Allcroft.

Polishing Artificial Marble.

[Answer to "E. R.," March 4.]

Sir,—This depends entirely on the type of artificial marble. If reconstructed under pressure, it can be worked and polished like real marble. If a pure surface treatment, probably varnish is the only saviour.

Carbonate.

Pointing Stone Front.

[Answer to "G. F.," March 4.]

Sir,—It used to be an axiom in masonry construction that no cement should be brought within several inches of the face of ashlar work. It is now admitted, however, that a gauging of cement in a mortar of lime and stone-dust has many advantages and does not stain the face of the works. A composition of one-part lime to two of stone-dust, gauged one-part cement to four or five of mortar, is very serviceable for all such purposes.

Mason.

Defective Tile Floor.

[Answer to "Tile," March 4.]

Sir,—The conditions described suggest that the original floor was not solidly bedded, but with air cavities left. If, as is stated, there is extreme heat in this room on occasions, the expansion in these voids would in time loosen and lift the tiles, as would the vibration of traffic over them.

Screed.

Filtering Shallow Well Water.

[Answer to "W. J. G.," March 11.]

Sir,—A good old grandmother's remedy for doubtful water was to stand a large lump of charcoal in any vessel used for storing drinking water. Whether this was mental suggestion or an actual sound precaution I do not know, but I can testify to an old couple of over 90 years each who thrived with no other drinking water than a very shallow well so treated. Filters can only be advantageously used in connection with a storage tank giving time for effective operation. A good firm of water engineers should be consulted.

Country.

THE BUILDING TRADE

THE LESSONS OF EXPERIENCE.—XII

By J. R. TAYLOR.

DAMP NEW BUILDINGS (*continued*).

It is some years since the British Medical Association, in the general interests of public health, sought the co-operation of the R.I.B.A. in regard to the prevention of the entry of damp into buildings. But for some time many architects were hardly awake to the fact that they themselves were concerned; they seemed to think that where buildings did admit damp they must have been erected by builders without architectural guidance. At all events, as far as could be gathered from the perusal of a large number of specifications and bills of quantities, little, if any, change in regard to materials or methods was considered necessary. The R.I.B.A. issued a circular containing certain recommendations, and gave its blessing to the cavity wall, but no general tightening up could be detected; but during the past two years there has been a distinct change for the better in this respect. One authority has put the case as follows: "The way in which the solution of the damp penetration problem will finally be found is still conjectural. It is quite conceivable that we may even be forced to discard some of our present materials and methods of construction . . . and it must be the object of those concerned in the science of building to advance knowledge to the state where serious penetration of moisture is discreditable."*

As was pointed out in last week's article, the great speed with which new buildings, and particularly domestic buildings, are now erected, has not only a large bearing on the amount of moisture that will be in the walls when the house, for instance, would otherwise be ready for occupation, but on the degree of want of resistance to penetration later on. The materials used in houses constructed on traditional lines do not lend themselves readily to great speed in building, and all this overhaste has in the long run to be paid for in added costs of repairs and earlier costs of renewals, to say nothing of doctors' and undertakers' bills. More than half the early defects that are met with in new houses are due to overhaste and want of seasoning. Seasoning means something else besides the drying out of timber before it enters into new construction. With brickwork it is called drying out; with concrete and cement rendering it is called curing. It is just as necessary in plastering as in cement rendering, but calls for a different method. There is no operation, from ramming the trench bottoms to applying the last coat of varnish, that does not require discrimination, time, season and method in order to obtain satisfactory results.

So far, more attention has been given to the search for new materials than to devising methods for using the old materials to better advantage. For reasons not easily understood, it seems to be thought that steel framing cannot be economically used except in very large buildings where space is of more importance than cost; yet if we could devise a method whereby the roof of a small building could be put on before the walls are built we should not only have much drier buildings to begin with, but they would remain drier for a much longer time. Here I think we may get some assistance from studying the change that has come about in regard to the construction of Dutch barns. At one time the roofs were carried on wooden posts or brick or masonry piers by means of wooden roof principals; to-day they are more often constructed with very light steel stanchions (about 6 in. by 3 in.) connected to light roof trusses of steel, and this change has been brought about by the comparatively low price of steel. Many Dutch barns have as great a height up to eaves as has the ordinary two-story house; and having regard to the fact that they stand throughout the year from harvest to harvest, in all stages from completely full to partially full and then empty, their resistance to wind is very remarkable. It seems to me that there is no substantial reason (not even from the point of view of strict economy) why we should not adopt this idea in ordinary domestic work.

I know, of course, that there is nothing at all new in the idea of using a steel frame for domestic buildings. It has been done frequently; but usually the steel frame is clothed with some other material than brickwork. I do not propose to let the final strength of the house depend on that of the steelwork, but, having once got the roof on and perhaps even only temporarily covered in, to carry up the outer walls in the ordinary way and let them carry the final load. This being the case, a very low factor of safety would suffice for the strength of the stanchions. The steel trusses would have a more permanent load, and it would probably be desirable to insist that they be very heavily galvanised or in other ways protected from rust.

In a small house, most of the ground-floor partition walls are but half-brick thick, and are found to be strong enough to carry the first-floor load. As is proved, when, as so frequently happens during alterations, the load is transferred to a girder, no ill-effects follow if the work is carefully and adequately done. The real requirements of an internal partition wall are that it should be sound-proof and hard-wearing. By transferring its load through girders to piers on outer walls a wider choice of materials for partition work is opened out. But the present object is to find means of putting up a stiffer resistance to the penetration of damp, and as far as possible let the drying be outwards rather than inwards. It is, therefore, proposed to first put on the roof, then build up the outer walls, tying them to some extent with rolled steel joists, and then, before proceeding to erect any partitions, render them internally from wall plate level to surface of concrete mat with waterproofed cement.

A suggestion of this sort will hardly meet with ready acceptance, but of feasibility there can be no doubt. Single-story buildings having a height of 14 ft. or more to eaves have often been built with one-brick panels and one-and-a-half brick buttresses or piers, and taken roofs pitch up to a greater height than that of the small house; and this has been done without giving them the later advantage that the house would have when the floors and partitions are put in and secured to previously built-in fixing lugs. From the point of view of cost the space gained in thickness of partitions would have a bearing; but the real saving would be brought about in cost of drying out being reduced, and cost of maintenance being so very much lessened. At first there would be some tendency to raise prices because of want of familiarity with the variation of method, and this would be found to operate to a larger extent in estimates that had to be made up without the assistance of properly prepared bills of quantities. Later, on account of the advantage gained owing to freedom from losses brought about by unfavourable weather, the costs would be found to be lower than at present.

It is, however, open to question whether it is not preferable first to consider the matter from the point of view of restoring some of the methods of construction used in earlier times for protecting the outer walls and rendering them more resistant to damp. By building very carefully, competent craftsmen can build a dry wall that is highly resistant to damp; and the jerry-builder, despite his want of care in regard to filling solidly all joints with mortar, sometimes builds a house that is reasonably free from damp penetration. As the result of some ill-controlled and over-hastily conducted experiments in regard to three walls built on a housing estate, it has been more or less inferred that architects and builders, who for generations have insisted that thoroughly filled joints in good mortar are esssential to good building, are entirely mistaken. Now, if there is one thing that stands out more than another in the reports issued by the Building Research Station, it is that in neglect of this old knowledge won in the hard field of experience the seeds of most of our troubles are found. Over and over again the experimental research work has confirmed the traditional methods employed by competent architects and builders and exposed the danger of departure from these methods and the price that has to be paid for ignorance or carelessness in regard to them. Slightly alien to the present subject, but as an example of how traditional knowledge, when tested scientifically, is found to be based on truth, a report of the Station as to the effects of colour on heat transmission may be given. For generations builders have whitewashed the roofs of workshops in order to keep the interiors cooler in summer, without having their conclusions scientifically confirmed; and now the Station has confirmed them. So it is, in many other things: the new facts confirm old theories. I shall return to a discussion of these older methods in the next article, but meanwhile it may help to remove any misunderstanding if I say that I in no way underrate the very valuable and important work that is being done at the Station. In disclosing the scientific facts, and thus providing us with sure foundations, they are giving us service of enormous value, and in exposing error they are doing something almost equally valuable. But the craft of building is one of the oldest, and the exploration of it is a task that no man may complete in a lifetime.

(*To be continued.*)

* See paper read by Mr. R. Fitzmaurice, B.Sc., A.M.Inst.C.E., before the Chartered Surveyors' Institution, published in our last and present issues.

TOWN PLANNING

The following town planning progress in England and Wales for the month ended February 29 is recorded:—

Scheme approved (Stage C.C.):—

Middlesex: Brentford and Chiswick U.D.C. (Chiswick (Riverside Land) Town Planning Scheme, Amending Scheme).

Yorkshire (North Riding): Scarborough T.C.

Draft Scheme adopted (Stage B.B.B.):—

Yorkshire (West Riding): Knaresborough U.D.C.

Preliminary statements submitted (Stage B):—

Durham: Gateshead T.C., Felling U.D.C., Whickham U.D.C., Chester-le-Street U.D.C., Chester-le-Street R.D.C. No. 1, Chester-le-Street R.D.C. No. 2.

(Resolution passed by Central North Durham Joint Committee.)

Hertfordshire: Watford R.D.C.

Resolutions received (Stage A):—

Lancashire: Carnforth U.D.C.

Southampton (Hampshire): Romsey T.C.

Staffordshire: Bilston U.D.C.

Suffolk: Aldeburgh T.C.

Surrey: Reigate R.D.C. (No. 6), Reigate R.D.C. (No. 7).

Worcestershire: Halesowen U.D.C.

THE BUILDING RESEARCH STATION

QUESTIONS AND ANSWERS.*

THE following abstracts of inquiries represent a number of those recently submitted to the Building Research Station. The information given in the replies quoted is based on available knowledge. It has to be borne in mind that further scientific investigations may in the course of time indicate directions in which the replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each inquiry, and are not necessarily suitable for general application to all similar problems.

Lifting of Floor Tiling.

An architect required information on the causes of the lifting of floor tiling. He had cases in his experience where large areas of tiling had become hollow, and had sometimes burst with an almost explosive effect.

Reply:—Lifting of tiling in this manner has been reported quite frequently, and a limited series of experiments has been carried out at the Building Research Station. It will be evident that lifting of the tiling is most likely to be due to an alteration in the relative areas of tiling and the supporting floor system on which the tiles are laid. Under practical conditions it seems likely that the shrinkage of concrete floors on drying is a factor which has an important influence.

Concrete sub-floors and cement mortar screeding coats shrink on drying, and even with an apparently dry, new concrete floor an appreciable shrinkage movement is still to be anticipated. Burnt clay tiles, on the other hand, show little or no movement with changes in their moisture content. Since flooring tiles are generally laid on incompletely dried concrete sub-floors and on a bed of rich cement screed, shrinkage of the sub-floor and screed takes place, and there is therefore a tendency to relative movement between the sub-floor and tiles, and stresses are introduced which result in compression of the tiling. Deflection of a floor system under load will also result in the compression of the upper part of the floor. The resistance of the tile floor to lifting depends on the strength of adhesion of the tiles to the sub-floor or cement screeding. Buckling, or the development of hollow areas, of the tiled floor may then be due to the shape of the tiles and to weakness of adhesion, or to the failure of normal adhesion under continued compressive stress. Most tiled floors are laid with "hair-joints," and this practice accentuates the buckling tendency, since it is a matter of some difficulty to fill very fine joints with mortar of suitable consistence.

It has been observed that many flooring tiles as ordinarily manufactured have slightly splayed edges, the surface area of the finished face of the tile being slightly greater than that of the keying face. Whether this splaying of the edges is intentional, so that a very fine joint may be obtained at the floor surface, or whether purely adventitious is not definitely known, though, judging from recent correspondence with manufacturers, it would appear that this splaying is often unintentional. In any case, the slight splaying of the edges makes a row of tiles more liable to lift when pressure is applied at the ends.

Experiments indicate that the lifting tendency due to the splayed edges will be much reduced if the joints are filled with a properly compacted mortar of normal consistence. Very fine joints filled with scum or laitance from the bed, or grouted in with neat cement and an excessive amount of water, are not likely to be satisfactory. Tiles which are in themselves slightly arched have also, of course, an increased tendency to buckling. While on the subject of tile manufacture, it might be mentioned that there would be an advantage if it were possible to obtain tiles with a definitely undercut key, *e.g.*, a dovetail groove, which would materially increase the strength of adhesion between the tile and the screed.

Fungoid Growth on Painted Walls.

A borough engineer asked for observations on a black fungoid growth which appeared on large areas of the walls of public baths. The walls were constructed of common brickwork, cement-rendered with wood-floated surface, and finished with a proprietary stone paint.

Reply:—The building in question was visited by an investigator, and the trouble was found to be one which occurs under certain conditions on decorative media containing oil or other organic material, and more especially where exposed to a warm, humid atmosphere. From accounts of attempts that have been made to eradicate growths of this kind, it is evident that considerable difficulty has been experienced. Where the surface affected has been cleaned off and redecorated the trouble is liable to recur unless the surface has been thoroughly sterilised with a fungicidal agent. It would appear, therefore, that paint used for redecoration should in itself be fungicidal. For the purpose of sterilising the Portland cement rendering, a solution of magnesium silicofluoride would be expected to prove effective, although actual experience of its use is lacking.

In conditions particularly favourable to the growth of moulds and fungi such as those obtaining in baths, it would usually be safer to avoid the use of organic decorative media altogether and, where glazed tiling is precluded on account of cost, to obtain decorative effects by the use of white or coloured cements. It is understood that certain of the leading paint manufacturers have considered the problem of incorporating fungicides in paint; their advice might be helpful in dealing with the problem of redecoration after sterilisation.

Durability of Wall Ties used in Cavity Walls.

An architect wished to know if it would be an advantage to have wall ties sherardised and oil-dipped in place of ordinary galvanising.

REPLY.—From information available at the Building Research Station, there has been no definite evidence of any marked superiority of the sherardising process over ordinary galvanising. Dipping in oil might offer some increased protection of the exposed portions of the ties, but there would be a tendency for linseed oil to saponify in contact with lime and cement mortars, and a point of weakness would be formed where the ties project from the mortar.

No reports have been received of actual deterioration of the ordinary galvanised ties, possibly because there has not been long enough experience of cavity wall construction, but if it is felt that some special treatment is desirable it would be worth considering the use of non-corrodible ties of copper or delta metal, which should be obtainable at a price comparable with that of a specially prepared zinc-coated article. Double-dipped galvanising has been specified in U.S. America, where special resistance to corrosion was required. Specification requirements for weight and quality of coatings have been laid down by the American Society for Testing Materials.

In view of the importance of the wall tie, it is considered that there is every justification for some additional expenditure on a superior article, if it can be shown that there is any likelihood of rapid deterioration of the ordinary tie. This appears to be a case where a standard specification would be of assistance. Such a specification, however, would involve careful consideration of the durability of the ties under service conditions.

Condensation of Moisture under Asphalt Roof Covering.

A firm of contractors sought the advice of the Station in connection with a trouble of a rather unusual nature. A building which had been completed and in occupation for nine months had been roofed with a hollow tile and reinforced concrete slab of normal construction; the roof was screeded with concrete and covered with an excellent mastic asphalt which, for acoustic reasons, had been laid on a heavy felt. The asphalt was uncracked, skirtings were properly made, and the parapets and balustrades were properly erected and well finished. The trouble took the form of persistent dripping of water from a number of electric light points; but the dripping only commenced in the winter months. Chases had been cut in the concrete from above to accommodate the electric lighting conduit, and an inspection of the building indicated that the felt underlying the asphalt was in a saturated condition; it was thus apparent that the chases for the conduit provided an easy outlet for moisture contained in the felt. The difficulty in this instance was to ascertain the manner in which the moisture obtained access to the felt.

REPLY.—It seemed that there were only two possible ways in which the felt could become saturated:—

(1) By penetration of moisture through joints in the balustrade or parapet walls round the extremities of the roof slab.

(2) By condensation of moisture on the underside of the asphalt. The exact mechanism of this would demand further consideration, but a similar effect may often be observed when a linoleum or similar impervious covering is placed on floor-boarding. It will sometimes be found that the underside of the covering and the upper surface of the boarding are very wet. In either case it appears evident that the felt, having properties analogous to a lamp-wick, provides a reservoir for the condensed moisture and also a channel by which the moisture can be conveyed to any weak points in the roof-slab.

It transpired in further correspondence that the trouble continued, and even became accentuated, during the recent prolonged spell of cool but abnormally dry weather. This seems to provide conclusive evidence that the moisture originated from atmospheric condensation, and that it was not due to penetration from the extremities of the slab. It is extremely difficult to indicate a remedy in a case of this sort; a possible expedient is to apply two or three coats of a high-gloss paint to the ceilings, which should provide a sufficiently impervious surface to prevent the passage of atmospheric moisture into the roof-slab. There will, however, be a tendency for moisture to condense on the paint at certain times and under certain weather conditions, but concentration of a large proportion of the condensed moisture at a few points, which is the worst nuisance in this case, should be prevented. Since an asphalt cover on a flat composite concrete and hollow tile-roof slab is such a common form of construction, it is somewhat surprising that difficulties of this kind have not been reported more often. The Building Research Station would welcome any comments on similar occurrences which may have been observed elsewhere, together with any suggestions as to remedial measures which have been found to be effective.

Bulging of Terrazzo Lining of a Swimming-bath.

The architect of a local authority reported that considerable bulging of the terrazzo lining of a swimming-bath had occurred. The walls of the bath were constructed of reinforced concrete lined on the inside with mastic asphalt; a cement-and-sand floating had been applied to the asphalt, and this had been finished with a terrazzo face. The inquirer wished to know whether this form of construction was one which might reasonably be expected to make a satisfactory job.

REPLY.—There could be little doubt that the trouble experienced in this case is due to the expansion of the floating and terrazzo lining due to prolonged storage under conditions equivalent to total immersion. If cement mortars or concretes are stored under water they will undergo a progressive increase

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in volume over long periods. This is a phenomenon which is well known and is briefly referred to in Building Research Technical Paper No. 11. In the present instance the conditions for the lining materials are definitely unfavourable; the reinforced concrete wall, with a subway at the back of it, will dry to the subway and there will be a tendency for it to contract, although no doubt the contraction is to some extent restrained by the reinforcement. The terrazzo and floating are restrained at the floor of the pond, and by scum-troughs at the top of the wall. No adequate restraint, however, is imposed by adhesion to the asphalt, and consequently the expansion of the linings must inevitably result in bulging. This form of construction is unlikely to be satisfactory for the lining of a swimming-bath.

L.C.C. SCHOOL OF BUILDING

The annual prize distribution of the L.C.C. School of Building was held on Friday, March 11, at the School of Building, Ferndale-road, Brixton, when Dr. Raymond Unwin presented the prizes. Amongst those present were Messrs. H. D. Searles-Wood (chairman of the advisory sub-committee of the school), R. H. Harry Stanger, E. Berry Webber, H. A. Drover, F. E. Drury (principal of the school), and Dr. R. E. Stradling.

After Mr. H. D. Searles-Wood had opened the proceedings by welcoming the visitors,

The Principal, in presenting his report, said the school felt highly honoured and much encouraged by the presence of Dr. Raymond Unwin and the other distinguished visitors. The school was divided into two sections—day and evening. The day section was again divided into three sub-sections—junior, senior, and apprentice. The number of day students was 423. The evening school had 1,114 students. The last year had seen the introduction of the scheme for National Certificates in Building, open to be gained by students for three years' successful study, with a higher certificate for a further two years' successful study in an advanced course. The school had entered 23 students, of which 19 had gained certificates. Further, the school had been successful in gaining honours by taking seven medals offered by the City and Guilds, one silver and two bronze medals by the Worshipful Company of Masons, and four firsts and two seconds by the National Painters and Decorators' Committee. The school had made further progress by the appointment of Mr. Norman P. Keep, A.R.I.B.A., as head of the building department. They had 80 evening students studying as architects, and these in the main were now preparing for the R.I.B.A. examinations. The Principal paid tributes to Mr. T. J. Reynolds, of the structural department, together with other departmental heads of the school, and he concluded by saying to the students that the success of the school did not depend on a few, but on all members, and he felt certain the general level of the school had much improved because that feeling existed.

In an address to the students Dr. Raymond Unwin said the building industry differed from other industries. For instance, the shoe and cloth industries made articles for use of the present, and did not set out to be of value to the country as did the building industry, which had to design and erect buildings that were to last for fifty or perhaps a hundred years. One thing all sections of the industry wanted was quality as well as quantity. We were going through a period when we were seeing things done by mechanism and mass production. But we had still to recover, and that could only be done by co-operation. The building industry was becoming more and more scientific: he remembered some years ago when the school carried out some tests for him while he was chairman of a committee which had now developed into the Building Research Station at Watford, at which Dr. Stradling was doing much valuable work. Referring to designing, he said we must maintain a certain amount of tradition in our designs, and we could not afford to play about with them, for we had to remember that the buildings erected were to last for years to come.

Mr. R. H. Stanger, in proposing a vote of thanks to Dr. Unwin, said they had all, he was certain, been inspired by Dr. Unwin's message to the industry, and the school were fortunate in having him there to present the prizes.

Mr. E. Berry Webber, in seconding, said his connection with the school went back many years. Those in the industry must remember that they were all of a team and must pull together.

Mr. W. F. Marchant also spoke in support of the vote. He said some months ago he was sent by the L.C.C. Education Committee to investigate into the question of extensions to the school, and he went back to the chairman of the Education Committee and told him that the school should be put first on the list for improvement, but he was sorry to say that educational schemes had been held up.

A vote of thanks was proposed to the chairman by Mr. Blackman and seconded by Mr. Drover.

Following is the list of principal medallists and prize-winners:—

EVENING SCHOOL.

The "Arthur Sage" medallion: A. Allen.
First prize, final, silver medal, City and Guilds of London Institute—brickwork: E. G. Dormon.
First prize, final, silver medal, City and Guilds—heating and ventilating: W. Ferne.
First prize, final, £3, and silver medal, City and Guilds—builders' quantities: L. J. Fleck.
Second prize, final, £2 10s., and silver medal, City and Guilds — builders' quantities: W. J. George.
Second prize, final, £7 and silver medal, City and Guilds—plasterers' work: H. Richards.
Second prize, intermediate, £3, and bronze medal, City and Guilds—plasterers' work.
First prize, intermediate, bronze medal, City and Guilds—heating and ventilating: E. Shutt.
Silver medal and £5, Worshipful Company of Masons: A. W. Pennington.
Bronze medal and £3, Worshipful Company of Masons, and silver medal and £2 2s., College of Masons: B. Kerr.
Bronze Medal and £2, Worshipful Company of Masons: G. Simpson.
Mr. E. Berry Webber's prize, £3 3s.: L. W. Thomas.
National Association of Shopfitters' prize, £3 3s.: I. F. Hanslip.
Gold medal awarded by Messrs. W. Harland & Son, for painting and decorating: J. R. Broughall.
Silver medal awarded by Messrs. W. Harland & Son for painting and decorating: A. Toop.

JUNIOR DAY TECHNICAL SCHOOL.

Third Year.—Institute of Builders' silver medal: H. J. Hopper.

NATIONAL PAINTERS' AND DECORATORS' JOINT EDUCATION COMMITTEE OF ENGLAND AND WALES.

National Painters' Competition, 1931.—First and second prize divided, £2—graining: E. W. Western. First prize, £1 1s.—colour schemes: C. R. Lee. First prize, £1 1s.—run lines: C. R. Lee. First prize, 15s.—free drawing: C. E. Pengilley. Second prize, 10s. 6d.—free drawing: J. W. G. Long.

NATIONAL DIPLOMAS AND CERTIFICATES IN BUILDING.

Ordinary National Diploma.—N. Back, R. P. Coombes, R. E. Harding, F. R. Hynard, J. F. Peacock.

Ordinary National Certificate.—A. Allen, E. S. Allwright, W. H. Bottomley, N. L. Brazier, G. I. Dance, H. G. Ede, F. V. D. Everest, W. J. George, J. L. Harwood, D. E. Horton, R. L. Jupp, M. E. Mercer, T. R. Nichols, D. M. Parfitt-Cook, W. H. Piper, J. R. Russell, W. G. Sanderson, H. A. L. Tozer, A. M. Trewin.

SHORT COURSES FOR TEACHERS

The Board of Education has arranged short courses for teachers in recognised technical colleges and schools, art schools, junior technical schools, evening institutes, etc., in England and Wales, to be held in July. The subjects include Building, Painting and Decorating, and Gas Engineering and Gas Supply.

The Building and the Painting and Decorating Courses will be held in London from Monday to Thursday, July 18 to 25, inclusive, and will be conducted by Mr. M. S. Briggs, H.M.I. The Building Course will include two series of lectures on the teaching of building construction in relation to the most modern practice in the industry. Mr. W. B. McKay, M.I.Struct.E., Head of the Building Department in the Manchester College of Technology, will deal with the subject as outlined in a normal syllabus for the first year of a senior course; and Mr. F. E. Drury, M.Sc. (Tech.), Principal of the L.C.C. Brixton School of Building, will deal similarly with the later stages of the subject in a senior course.

In the Painting and Decorating Course two series of lectures will be given. Mr. J. M. Holmes (Slade Diploma), of the Architectural Association School, will deal with the theory of pattern as applied to the work of the painter and decorator. Mr. Noël Heaton, B.Sc., F.C.S., will give a course of lectures, demonstrations and laboratory work dealing with the chemistry of paints and paint materials, and including elementary instruction in the technical methods of identifying the materials used in paint manufacture and of judging their quality.

The Gas Engineering and Gas Supply Course will be held in London from Monday to Friday, July 4 to 8, inclusive, and will be conducted by Mr. C. H. Creasey, H.M.I.

Communications should be addressed to the Secretary, Board of Education, Whitehall, London, S.W.1.

UNEMPLOYMENT IN THE BUILDING INDUSTRY

Building Trade Workers.

Mr. McGovern asked the Minister of Labour in the House of Commons if he could state the number of building trade workers who were unemployed; the numbers and trades of each section; and the amount of unemployment benefit paid each week.

Sir H. Betterton said that the following statement showed the insured persons in the building industry classification recorded as unemployed in Great Britain at January 25, 1932:—

Occupation.	Number.
Carpenters	37,452
Bricklayers	21,630
Masons	5,390
Slaters and Tilers ...	1,797
Plasterers	7,825
Painters	57,450
Plumbers...	9,009
Labourers to above ...	72,028
All other occupations ...	61,206
Total	273,787

Accounts were not kept of benefit or transitional payments paid in separate trades, but assuming that the average rates for men and boys applied to this trade, the approximate total cost would be £215,000 for the week.

Mr. Hicks asked what was the total amount of unemployment and transitional benefit paid to unemployed building trade operatives and public works employees, respectively, for the three months ended January 31, 1932.

Sir H. Betterton said that accounts were not kept of the amount paid in separate trades, but, assuming that the average rates for men and boys applied to building trade operatives and public works employees, the total amount of insurance benefit and transitional payments for the period mentioned would be £2,585,000 for building trade operatives and £1,017,000 for public works employees.

BUILDING SCIENCE ABSTRACTS

Recent contributions to the literature of building materials, as reflected in the summaries published in the February issue of "Building Science Abstracts," present many features of interest. Information of value to those interested in the construction and maintenance of stonework will be found in a description of the experience gained in several years' work in the preservation of a sixteenth-century sandstone castle (Abstract No. 189), in a report on the weathering of tombstones and similar memorials (Abstract No. 190), and in an account of the weathering of travertine in urban atmospheres (Abstract No. 191). In this connection mention must be made of a paper dealing with stone preservatives which contains a description of a useful blotting-paper test for determining the value of certain types of such preparations (Abstract No. 296). The clayworks manager should be interested in a report by the U.S. Bureau of Standards on a study of the design of dies and augers (Abstract No. 198), in the results of an investigation of the effects of grog in the manufacture of bricks by the dry-press process, in a description of various types of kiln used in the production of "Klinker" bricks, as well as in a number of summaries dealing with other practical aspects of clayware manufacture. The study of the setting of plaster of Paris, which received notice in January (Abstract No. 44), has now been supplemented by another investigation carried out by American workers in this field (Abstract No. 223), while plaster and paint technologists will alike be interested in a discussion of the surface conditions of plasters as they affect paint coatings (Abstract No. 222).

Valuable information relating to the effects of materials and methods of placing on the strength and other properties of concrete and reinforced concrete slabs made up with "Haydite," gravel, and crushed limestone aggregates respectively, will be found in a lengthy report of work done by the U.S. Bureau of Public Roads (Abstract No. 230). Concrete is vulnerable to attack by many different chemical agencies, and problems connected with its use in industrial buildings are frequently encountered. Particular interest attaches, therefore, to a discussion of the use of bituminous protective coatings for concrete exposed to the action of acids, etc. (Abstracts Nos. 232-3). While such coatings, as well as integral waterproofing compounds, which were exhaustively discussed in Abstract No. 52 (January), undoubtedly are of value, concrete durability depends fundamentally upon the inherent properties—density and strength—of the materials itself. Data bearing on concrete proportioning are, therefore, of value (Abstracts Nos. 229, 237, 239). In this connection a German worker reports on the effects of trass admixtures on the strength, shrinkage, and bond with reinforcement of Portland cement concrete (Abstract No. 240).

The ever-present problem of damp-proof construction receives merited attention in a discussion of the properties desirable in masonry cements and of the behaviour of mortars in brickwork (Abstract No. 242). The manufacturer of concrete products will find information of interest in some monographs dealing with the production and properties of concrete wall and floor slabs (Abstract No. 243), pipes (Abstract No. 244), roofing tiles (Abstract No. 245), and cement pigments (Abstract No. 246).

Among papers dealing with the properties and uses of metals used in building, mention may be made of the use of nickel steel in the construction of large bridges in U.S.A. (Abstract No. 275), and with American practice in reducing production costs and simplifying the manufacture and sale of reinforcing steel bars by limiting to 11 the number of sizes, in cross-sectional area, in which such products are manufactured and used (Abstract No. 276). Another paper in this section reports on a Swedish study of the strength of welded joints (Abstract No. 285). The engineer will find interest in summaries of papers dealing with the strength of columns (Abstract No. 315), "creep" in reinforced concrete (Abstracts Nos. 317-8), and with the theoretical aspects of structural design (Abstracts Nos. 219-333).

Much has been done and written of late in connection with possible developments in the use of steelwork, and those interested in this field should be interested in Abstracts Nos. 337-340, and in a discussion of the relative possibilities of reinforced concrete and steel (Abstract No. 341). Among several papers dealing with reinforced concrete practice, mention must be made of a paper describing advantages claimed for welded steel mesh reinforcement as compared with ordinary bars (Abstract No. 346), and of another which provides information regarding the minimum requirements of German insurance companies with regard to the fire-resistant construction of reinforced concrete industrial buildings (Abstract No. 356). Reinforced brickwork again finds mention in a report by the U.S. Bureau of Standards on strength tests on beams, and in descriptions of a British proprietary system of construction and of an American type of reinforcement consisting of metal stampings (Abstracts Nos. 352-4).

"Building Science Abstracts" represent the results of skilled scrutiny of the literature of building and building materials throughout the world, and much further information on the subjects dealt with is contained in the records of the Building Research Station, and is available free to all inquirers.

RUBBER AS A SHOCK ABSORBER

Lecturing before the Institution of the Rubber Industry recently, at the First Avenue Hotel, High Holborn, W.C., Mr. H. C. Young said that old-time buildings were built of brick or masonry, the metal put into them being cast or wrought iron. Their architects had not examined the soil under the foundations. Winchester Cathedral and St. Paul's were examples of this. If Wren had had a greater knowledge of the soils he was building on he would probably have taken greater precautions with the foundations of St. Paul's. Although builders in the past had not worked out a factor of safety, it was remarkable what stability they sometimes achieved. For example, in the case of the brick viaducts of railways the designers could not possibly have foreseen the enormous impact and live loads due to modern traffic; but the brick viaducts were strong enough to stand the strain. Another example of the success of old buildings was shown by factories in the north of England. He had a case in mind of a building seven or eight stories high which for more than a century had withstood the vibration of engines and machinery. The base of this building was dish-ended—it was built on a poor subsoil, and the designer intended that if there was any settlement the building should go down as a whole. Solidly built factory buildings could not be greatly affected by vertical vibrations; horizontal vibrations were more important. But the horizontal bond in a brick wall was usually only mortar: brickwork might be so bonded that the mortar did not go through the wall from one side to the other, but it generally did. There were layers of brick and layers of mortar, and in that lay probably an element of weakness. An eminent architect had said of brick-built buildings two or three hundred years old that every jar shook out a little sand from the mortar. This was usually met by repointing the building. In the case of a steel building a similar phenomenon took place with the rivets. Vibrations caused a grinding of the rivet against the frame in which it was embedded, steel was ground away in a very fine powder, and the rivet tended to become loose. In the case of a reinforced concrete building there was an element of danger because vibrations travelled through steel more rapidly than through concrete. This caused disintegration. The strength of a steel bar as compared with concrete was as 16,000 to 600, but unless there was adhesion, the strength was only that of the concrete.

Most vibrations were too small to be measured by any instrument, though the human brain readily detected them and felt an annoyance in consequence. The coarsest form of vibration commonly affecting buildings was that due to pile driving. Here both vertical and horizontal vibrations had to be taken care of. The heavy traffic on roads and the rock drill used in repairing roads were among other causes of vibration. Cork was an excellent material for damping out vibrations, but rubber was much better. Vibration in machinery should be insulated at its source. With road vibration, the real remedy was a rubber road. An inventor had patented a rubber wall which was to be put down into the soil between the roadway and the building to be protected, but, while such a wall would damp out horizontal vibrations, it would have no effect on vertical ones. Rubber would make a very effective damp-course, and, so used, would help to damp out vertical vibrations.

In the discussion, among points brought out was the much greater cost of rubber as compared with cork, also its much greater cost than that of ordinary paving materials. It was urged that rubber might be used as paving around valuable buildings that it was desired to preserve.

PRODUCTION IN BUILDING

The fifth and last volume of the series in which the Final Report on the Third Census of Production (1924) has now been issued. It relates to four groups of trades, viz., (i.) Mines and Quarries, (ii.) the Timber Trades, (iii.) Manufactures of Clay, Stone, etc., and the Building and Contracting Trades, and (iv.) Public Utility Services and Government Departments. It contains a separate report on each individual trade and, for each group of trades, a general report. In addition, there is an appendix containing general statistical tables which show the results of the Census as a whole. The section dealing with the building and sub-contracting trades is based upon schedules required from every person who, by trade or business, "undertakes the construction or alteration of a building or any part thereof," or "executes works of construction, alteration or repair" of a list (detailed in the Report) of public works. The returns show that the number of such firms in Great Britain and Northern Ireland were, in 1924, about 37,000. It is believed that in addition there were about 13,000 "one-man" businesses, employing, it is estimated, not more than 40,000 persons, including the proprietors. The total value of the building construction done in 1924 was £168,240,000, as compared with the 1907 figure of £73,448,000. Public works construction amounted in 1924 to £22,086,000, whereas in 1907 it totalled £13,636,000. The total amount expended through the building and contracting trades, other trades (as iron and steel structural work), and public utility, local authority and Government Departments was £343,019,000, as compared with the 1924 figure of £143,713,000.

The section dealing with local authorities also contains some interesting figures. The returns were from local government and other public authorities (as canal, dock, harbour, river, etc.), numbering in all 2,233.

Price, 7s. net; copies are obtainable from H.M. Stationery Offices, at Kingsway, W.C., or elsewhere.

NEW BUILDINGS IN LONDON

Air-street.—ALTERATIONS.—Premises at the corner of Air-street and Brewer-street are to be altered. The contractors are Messrs. A. Pascall and Son, Ltd., of Albion Works, Down-place, W.6.

Barking.—HOUSES.—The T.C. are inviting tenders for the erection of 102 houses on the Upney Farm estate. The plans have been prepared by Mr. C. J. Dawson, F.R.I.B.A., Clock House-chambers, Barking.

Beckenham.—CHURCH.—Messrs. W. A. Pite, Son and Fairweather, 12, Carteret-street, S.W.1, are the architects for a new church to be known as St. John the Baptist in Eden Park. Messrs. Elliman and Son, Ltd., of 102, Bromley-road, Beckenham, are the builders.

Berkeley-square. — ALTERATIONS. — Plans have been prepared by Mr. C. W. Fox, A.R.I.B.A., Bruton Club, Lansdowne House, Berkeley-square, W.1, for alterations and additions at Lansdowne House. The contract has been placed with Messrs. Walter Lawrence and Son, Ltd., 31, Sun-street, E.C.2.

Bermondsey.—BUILDINGS.—The B.C. have approved the application submitted by Mr. G. W. Trotman for the erection of buildings at the Convent of Mercy, Arnolds-place.

Bermondsey.—HOUSING.—The B.C. have had plans prepared for the following housing schemes:—16 flats, on the Millpond estate; 24 flats and 10 maisonettes, on the Crosby-row area; 25 flats and 5 shops (comprised in block No. 2), and 21 flats (comprised in block No. 1), at Silver-street.

Chelsea.—HOUSES.—Messrs. Cadogan Developments, Ltd., have applied to the Chelsea B.C. for consent to the erection of ten houses, on the south-western side of Sloane-avenue.

Covent Garden.—REBUILDING.—A warehouse is to be erected on the site of 15 and 16, Floral-street, W.C.2. Plans have been prepared by Messrs. W. E. Riley and Glanfield, FF.R.I.B.A., 6, Raymond-buildings, W.C.1.

Deptford.—BUILDING.—Messrs. D. Rowell and Co., Ltd., 14, Hawick-place, S.W.1, are the engineers for a new building at the corner of Edward-street and Grinling-place.

East Ham.—EXCHANGE.—For erection of the employment exchange for H.M.O.W., the contract has been placed with Messrs. E. A. Russell, Ltd., Belgrave Works, Boundary-road, E.17.

East Ham.—EXTENSIONS.—Are to be carried out at the Trebot works, Shaftesbury-road, East Ham. Plans have been prepared by Messrs. J. C. Melliss and Co., 16, St. Helen's-place, E.C.3. The contract is in the hands of Messrs. John Mowlem and Co., Ltd., Ebury Bridge-road, S.W.1.

Finchley.—SCHOOL.—The E.C. are proposing the erection of a new elementary school in Summers-lane.

Grosvenor-road. — CONVENIENCE. — The Westminster City Council recommend the provision of a public sanitary convenience in the public garden to be laid out by the L.C.C. in Grosvenor-road, a little to the south of Lambeth Bridge, at £5,500.

Hamilton-road.—FLATS.—Plans have been prepared by Messrs. Gale, Heath and Sneath, 15, New Bridge-street, E.C.4, for flats at the rear of 58, Hamilton-road, W.

Hampstead.—BUILDING.—With reference to the paragraph which appeared in our last issue under this heading, we stated that Messrs. Cole-Adams, Phillips and Cheriton, architects, 45, Lower Belgrave-street, S.W.1, had submitted plans to the L.C.C. for the erection of buildings upon a site on the south-western side of Haverstock-hill, Hampstead, abutting also upon Belsize-avenue and Ornam-road. This, we understand, is incorrect, as the application only applies to a building line.

Hampstead.—EXTENSIONS.—Messrs. Alfred Savill and Sons, 51A, Lincoln's Inn Fields, W.C.2, have prepared plans for extensions to the Carlton Garage, at West End-lane, N.W.6. The builders are Messrs. Franks and Simons, Ltd., 340, Mile End-road, E.1.

Hendon.—BUILDINGS.—The L.C.C. recommend that, subject to the consent of the M.H., the site at the junction of Deansbrook-road and Orange Hill-road, Watling Estate, Hendon, be let to the New Estates Community Committee, for the erection of buildings for use as a community centre.

Hornsey.—FLATS.—A further block of flats is to be built on the Southwood Hall estate. The architect is Mr. Horatio Holmes, 5, Rosemount-terrace, N.12, and the builders are Messrs. R. W. Hill (1927), Ltd., 14, Archway-road, N.19.

Houndsditch.—WAREHOUSE.—Messrs. Lewis Solomon and Sons, 21, Hart-street, W.C.1, are the architects for a warehouse at 126 and 128, Houndsditch. The building contract has not yet been settled.

Hounslow.—RECONSTRUCTION.—Premises at 65, High-street, Hounslow, are to be reconstructed. Plans have been prepared by Messrs. P. Chase Gardner and Co., 269, High-street.

Hounslow.—WORKS.—Mr. D. T. Lungley Moore, 15, Bridge-avenue, Hammersmith, W.6, has prepared plans for new printing works in Alexandra-road, for the Wellington Printers, Ltd., Cursitor-street, E.C.4.

Kennington.—RECONSTRUCTION.—The "Red Lion" public-house, 42, Kennington Park-road, S.E.11, is to be reconstructed for Messrs. Hoare and Co., Ltd., brewers, Red Lion Brewery, St. Katherine's-way, E.1. No building contract has yet been placed.

Lewisham.—ADDITIONS.—Messrs. H. and J. Taylor, builders, Canada House, Hither Green-lane, S.E.13, are erecting additions to the "Roval Oak" public-house, Church-street. The architect is Mr. F. M. Kirby, of Messrs. Courage and Co., brewers, and the work will cost about £1,200.

Lewisham. — EXCHANGE. — H.M.O.W. are inviting tenders for the erection of an employment exchange at Lewisham. The plans are by the architect's department of H.M.O.W.

Lewisham. — PREMISES. — Messrs. Petch & Fermaud, architects, 8, Buckingham Palace-road, S.W.1, have prepared plans for the erection of a building on the site of 156-158, High-street. The contract has not yet been placed.

Lewisham.—STORE.—Mr. F. T. Dear, A.R.I.B.A., architect to the United Dairies, Ltd., Palace-court, W.2, has prepared plans for a new store at the milk depôt, in Baring-road.

Lewisham.—HOUSES.—Houses are to be erected at Perry Hill, Lewisham, S.E. Plans have been prepared by Mr. A. A. Culliford, 3, John-street, W.C.1. The builders are Messrs. Tysoe and Harris, Ltd., Petts Wood-road, Orpington.

Ludgate Hill. — ALTERATIONS.—Licensed premises, "The Arches," Ludgate Hill, E.C.4, are to be altered and improved. The work will be carried out by the owners, Messrs. Findlater, Mackie, Todd and Co., Findlater House, Wigmore-street, W.1.

Marylebone-road.—EXTENSIONS. — Messrs. Nicholas and Dixon-Spain, FF.R.I.B.A., 19, Hanover-square, W.1, are to prepare plans for extensions at the Samaritan Free Hospital for Women, Marylebone-road, W.1.

Mile End.—REBUILDING.—The L.C.C. concurs in the proposal to rebuild the Queen's Hall, on the site of St. Helen's-terrace and adjoining land, and to set free the rest of the site of the People's Palace for use by East London College.

Mitcham.—LIBRARY.—Messrs. Chart, Son and Reading, Union Bank-chambers, Croydon, are the architects for the proposed new library in London-road, for the U.D.C. The building contract has not yet been placed.

Neasden.—EXTENSIONS. — Messrs. Logan and Hemingway, of Doncaster, have secured the contract for extensions to the boiler-house at the Neasden power station for the Metropolitan Railway Co.

New Malden.—CHURCH.—Messrs. J. E. Newberry and C. W. Fowler, Parliament-mansions, Victoria-street, S.W.1, are the architects for a new church. The contract for the work has not yet been placed.

Norbury.—HOTEL.—The Licensing Justices have approved plans for the erection of the new "Crown Hotel" on a site in London-road, for Messrs. Barclay, Perkins and Co., Ltd., Park-street, Southwark, S.E., to the plans prepared by their own architectural staff.

Paddington.—OFFICES.—New cartage offices are to be erected at the Paddington Goods Station, W.2, for the G.W.R. Plans have been prepared under the direction of the Chief Engineer, Paddington Station, W.2. The contractors are Messrs. William Walker-dine, Ltd., 115A, Walmer-road, W.10.

Piccadilly.—ALTERATIONS.—Messrs. Scotts' premises are to be altered to plans prepared by Mr. E. G. W. Souster, F.R.I.B.A., 3, St. James's-street, S.W.1. The builders are Messrs. Rice and Son, Ltd., 15, Stockwell-road, S.W.9.

Purley.—ALTERATIONS.—A contract has been placed with Messrs. J. Smith and Sons (Norwood), Ltd., Carmichael-road, S.E.25, for alterations and additions at the Purley War Memorial Hospital. Plans have been prepared by Messrs. Thompson and Walford, Leadenhall Buildings, E.C.

Regent-street.—EXTENSIONS.—Are proposed to Messrs. Lillywhites, Ltd., Criterion-buildings, 24, Regent-street, S.W.1. The architect is Mr. L. Prior Hale, L.R.I.B.A., A.I.Struct.E. (Fitt & Prior Hale), 3, John-street, Bedford-row, W.C.1.

Richmond. — REBUILDING. — The old "Bricklayers' Arms" public-house, Lower Mortlake-road, Richmond, Surrey, is to be rebuilt for Messrs. Watney, Combe, Reid and Co., Ltd., Stag Brewery, Westminster, S.W.1. Plans have been prepared by Messrs. F. J. Fisher and Sons, 35, John Street, W.C.1. The contract is in the hands of Messrs. A. and B. Hanson, Ltd., 44, Featherstone-road, Southall.

Rotherhithe.—REBUILDING.—The "Ship" public-house is to be rebuilt for Messrs. Whitbread and Co., Ltd., of Chiswell-street, E.C.1. The building contract for this work has not yet been placed.

Shoot-up Hill, N.W.—FLATS.—Mr. Arthur F. Davis, 348, High-road, Kilburn, N.W.6, is the builder of 32 flats at Shoot-up Hill.

Southwark. — ALTERATIONS. — To "Peacock" public-house, at 24, Holland-street, S.E.1, are proposed by Messrs. Meux's Brewery Co., Ltd.

Sudbury.—HOTEL.—A new hotel is to be erected on a site at Sudbury Heights. Plans have been prepared by Mr. W. S. Grice, F.R.I.B.A., 30, Upper Berkeley-street, W.1. The contract will be carried out by Messrs. A. and B. Hanson, Ltd., 44, Featherstone-road, Southall.

Tottenham.—EXTENSIONS.—Messrs. Young and Hall, 17, Southampton-street, W.C.1, have prepared plans for extensions to St. Catherine's College, for the Society for Promotion of Christian Knowledge. The building contract has not yet been placed.

Vauxhall.—ADDITIONS.—Messrs Hoare and Wheeler, of 22, Portman-street, W.1, are the architects for alterations and additions at 278, Vauxhall Bridge-road, S.W. Tenders for this work have not yet been invited.

Wembley.—HOUSING.—The U.D.C. are inviting tenders for the erection of 54 brick-built, non-parlour cottages at Perivale-lane, Alperton, Wembley. Mr. Cecil R. W. Chapman, engineer and surveyor, has prepared the plans.

Whitechapel-road.—PREMISES.—New business premises are to be erected. The contract has been placed with Messrs. W. Silk and Son, Ltd., 13, High-street, N.9.

Willesden.—SHOPS.—Plans have been prepared by Mr. Robert Cromie, F.R.I.B.A., 35, Baker-street, W.1, for shops and flats in Coles Green-road and Crest-road, Willesden, N.W. The contractors are Messrs. Richard Costain and Sons, Ltd., 7, Norfolk-street, W.C.2.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1932

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Accrington	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Aldershot	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Alfreton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Alnwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Altrincham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ashford (Kent)	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Ashington	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Ashton-under-Lyne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Aylsham	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Banbury	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Barnsley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Barnstaple	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/-
Barrow-in-Furness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Barry	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Basingstoke	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bath	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/0½
Bedford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/0½
Berwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bexhill	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Birkenhead	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3½
Birmingham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bishop Auckland	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Blackburn	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Blackpool	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bognor Regis	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Bolton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bradford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bradford-on-Avon	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11
Braintree	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Brentwood	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bridlington	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bristol	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bromsgrove	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bromyard	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Bungay	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Burnley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Burton-on-Trent	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bury St. Edmunds	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11
Buxton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cambridge	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Canterbury	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Cardiff	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Carlisle	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Chelmsford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Cheltenham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Chester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chesterfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chorley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cirencester	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Clacton	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Coventry	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cranbrook	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Crewe	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cromer	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Darlington	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Deal	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Denbigh	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Derby	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Devizes	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	1/1½	11
Dewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Doncaster	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dorchester	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Dorking	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Dovercourt	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Driffield	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Droitwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dudley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Durham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
E.Glam.(Mon.Val.)	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Ely	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Exeter	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Exmouth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Fakenham	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Felixstowe	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Folkestone	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Frome	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Glossop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Godalming	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Goole	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Gosport	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Grantham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gt. Yarmouth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Grimsby	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Guildford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Halifax	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Harpenden	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Harrogate	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hartlepools	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Harwich	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Hastings	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Hatfield	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hednesford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hereford	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Herne Bay	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Hertford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hitchin	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hoddesdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Holt	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Huddersfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hull	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hunstanton	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Huntingdon	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Isle of Wight	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Keighley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kettering	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Kidderminster	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Kings Lynn	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Lancaster	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leamington Spa	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Leeds	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leicester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leighton Buzzard	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Lichfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Lincoln	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Littlehampton	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Liverpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Llandudno	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Llanelly	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
London—								
12 m. radius	1/7½	1/7½	1/7½	*		1/7½	1/7½	1/3½
12-15 m. radius	1/7	1/7	1/7	*		1/7	1/7	1/6
Loughborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lowestoft	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Luton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Macclesfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Malvern	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Manchester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Mansfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Margate	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Market Harborough	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Matlock	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Melton Constable	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Melton Mowbray	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Merthyr Tydfil	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Middlesbrough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newark	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Newbury	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Newcastle-on-Tyne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newcastle-u-Lyme	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
New Forest	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Newmarket	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Newport, Mon.	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Northampton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Norwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Nottingham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Nuneaton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Oakham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Oldham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Oxford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Paignton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Peterborough	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Pontypridd	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Preston	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ramsgate	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Reading	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Redcar	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Redditch	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Reigate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Retford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Ripon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Rochdale	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Rugby	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Saffron Walden	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
St. Albans	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
St. Helens	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sawbridgeworth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Saxmundham	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Scarborough	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Sevenoaks	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Sheffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Shrewsbury	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sittingbourne	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Southampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
South Shields	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stevenage	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Stockport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stockton-on-Tees	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stoke-on-Trent	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stourbridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stourport	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1½
Stowmarket	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Stratford-on-Avon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Stroud	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/3½
Sunderland	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Swaffham	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Swansea	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Swindon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Tamworth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Taunton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Thetford	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Totnes	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Trowbridge	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Tunbridge Wells	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Uttoxeter	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Wakefield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Walsall	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Walsden	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Warminster	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Warrington	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Warwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1½
Wells (Norfolk)	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Welwyn Gar. City	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
West Bromwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Weston-super-Mare	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1½
Weymouth	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Whitby	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1½
Wigan	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Winchester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wisbech	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Wolverhampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Woodbridge	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Worcester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Worksop	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Worthing	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Wrexham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wycombe	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wymondham	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
York	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½

*The rate recognised by the National Association of Plasterers, Granolithic and Cement Workers, as and from the 1st February, 1932, is 1/9½ per hour.

For Building Trade wages in Scotland, see page 540

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

MARCH 21.

Ballydehob.—Dispensary.—For West Cork Board of Public Assistance. W. H. Spiller, secretary, County Home, Clonakilty. Dep. £5.

Cardiff.—Extension.—To Vagrants block at City Lodge, Cowbridge-rd., for T.C. Geo. H. Whitaker, City Architect.

Cork.—Improvements.—Improvements to Castleventry burial ground; Kilgarriff burial ground; removing walls of ruin in Ballintemple burial ground; improvements to Baltimore burial ground; providing and laying overflow pipe from storage tank, Courtmacsherry waterworks; extension of sewer at Castle-lane, Dunmanway; improvements to Union Hall waterworks; repairs to 10 cottages in Clonakilty district; repairs to 14 cottages in Dunmanway district; repairs to 20 cottages in Skibbereen district, for Cork County Board of Public Health. W. H. Spiller, Secretary, Clonakilty.

Darwen.—Houses.—24 at Marsh House, for T.C. B.E.

Dublin.—Roofing.—Providing and fixing new rolled steel joists and laying new asphalt roofing in the dwellings and lodging-house, Benburb-st., for Corporation. Architect, Exchange-bldgs., Lord Edward-st.

Edinburgh.—Demolition.—Of buildings at 15-23, Hardwell-close, for T.C. B.E.

Glasgow.—Installation.—Electric lighting installation at Garngad rehousing scheme, for T.C. General Manager, Electricity Dept., 4, West Regent-st., Glasgow, C.2.

Isle of Wight.—Repairs.—Renewal of fender piles and repairs to quay wall at Trinity Wharf, East Cowes, for Trinity House, London. Secretary, Trinity House, Tower-hill, London, E.C.3. Dep. £1.

Kiltegan.—Repairs.—For the Wicklow Board of Health. At Kiltegan dispensary residence; and (2) renovation and painting of the chapel at the District Hospital, Baltinglass. P. W. Sheehan, secretary, Board of Health Offices, Rathdrum, by noon on March 21.

Knaresborough.—Installation.—Of low pressure hot-water apparatus at King James's grammar school, for West Riding C.C. Education Officer, County Hall, Wakefield.

Knaresborough. — Housing. — 8 non-parlour houses on Beech Hill area, for U.D.C. S. Blenkhorn, architect, 47, Kirkgate. Dep. £2.

Leeds.—Additions.—Alterations and additions to entrance at Museum Park-row, for T.C. J. E. Acfield, City E.

London.—Installation.—Electric lighting installation work at block of tenement dwellings, for Bethnal Green B.C. D. J. Keep, T.C. Dep. £2 2s.

Morley.—Installation.—Of low pressure hot-water apparatus and electric light at grammar school (textile dept.), for West Riding E.C. Education Officer, County Hall, Wakefield.

Mutford and Lothingland.—Housing.— 4 houses in New-rd., Barnby; 4 houses (Block "A") in Hall-lane, Blundeston, and 4 houses (Block "B") in Hall-lane, Blundeston, for R.D.C. H. Blewitt, S. Dep. £1 1s.

Nottingham.—Houses.—Booster pump house at Selston, also booster pump house at Normanton-on-the-Wolds, for T.C. F. W. Davies, Engineer and General Manager, Water Offices, Castle Boulevard. Dep. £2 2s.

Offaly. — Houses. — 4 houses and 2 outoffices on lands of Finter, for Irish Land Commission. M. Deegan, secretary, Upper Merrion-st., Dublin. Dep. £1.

Rathdrum.—Annexes.—For Wicklow Board of Health, etc. P. W. Sheehan, secretary, Board of Health Offices, Rathdrum.

Solihull.—Dwellings.—Solihull, 32 houses, Damsonlane; Balsall, 6 houses, Hob-lane, for R.D.C. W. T. Orton, 86, New-st., Birmingham; Balsall houses, Bateman's, 19, Bennett's-hill, Birmingham, architects. Dep. £1 1s.

Trowbridge.—Painting.—External painting of 78 houses at Studley-rise and 35 at Pitman-av., for U.D.C. S.

MARCH 22.

Banbury.—Sorting Office.—For H.M.O.W. Contracts Branch, King's Charles Street, London, S.W.1. Dep. £1 1s.

Bolton.—Houses.—18 non-parlour, on Hall I'th' Wood estate, for C.B. Housing Director, Westminster Bank-chams., Old Hall-st. North. Dep. £2 2s.

Brighton.—Residence.—Poor Law Institution. Public Assistance Officer. Dep. £3 3s.

Dewsbury.—Additions.—Alterations and additions to Eastborough schools, for C.B. Borough Architect and Surveyor.

East Kesteven.—Dwellings.—Three pairs of working-class dwellings in parish of Ruskington, for R.D.C. Edwin H. Sills, L.R.I.B.A., Council Offices, Northgate, Sleaford.

Glasgow.—Houses.—1,054 houses, including hostel, at East Keppoch, for T.C. D. Stenhouse, T.C.

Grimsby.—Demolition.—For 11 houses in Humber-st. and Stirling-st., for Corporation New Fish Dock Committee. H. G. Whyatt, B.E.

Kirriemuir.—Houses.—20 houses at Sidlaw Range housing site, Glamis-rd., for T.C. J. S. Bruce, B.S.

Knottingley.—Housing.—Four houses at Quarry-av., for U.D.C. G. J. Laverick, S. Dep. £1 1s.

Richmond (Surrey).—Demolition.—Of Ormond cottage, Ormond-rd., for T.C. B.E. Dep. £1 1s.

Rowley Regis.—Houses.—42 small non-parlour type, etc., at Dudley-rd., for U.D.C. D. Wright, clerk.

Tonbridge.—Houses.—26 in Somerhill-rd., for U.D.C. W. L. Bradley, Housing Architect, The Castle Dep. £2 2s.

MARCH 23.

Glasgow.—Building.—Proposed built urinal in Gallowgate, east of Camlachie Institute, for T.C. D. Stenhouse, T.C.

Hailsham.—Convenience.—Public convenience at Stoney-lane, for R.D.C. W. O. Humphery, E. and S., 17, London-rd. Dep. £1 1s.

Harrow-on-the-Hill.—Building.—Erection of office and weigh bridge foundations; drainage work, and water supply at Refuse Disposal Works, Pinner-lane, South Harrow, for U.D.C. J. Percy Bennetts, E. and S.

Hendon.—Fencing.—Fencing at Little Stanmore sewage farm, Kenton-rd., Kenton, for R.D.C. H. W. Rackham, E. and S.

Hinckley.—Houses.—58 houses, for R.D.C. E. H. Crump, architect, Barclays Bank-chambs. Dep. £3 3s.

Lydney.—Houses.—24 non-parlour type houses on Oxford-st. site, Lydney; 6 non-parlour type houses in parish of Woolaston, for R.D.C. G. J. Elliott, S., Highland Villa, Tutnalls, Lydney. Dep. £4 4s.

Manchester.—Office.—Weighbridge, office, etc., at Russell-rd., cleansing depot, Blackley, for T.C. City Architect. Dep. £1 1s.

Reading.—House.—In City-rd., Tilehurst, for C.B. Housing Architect. Dep. £2 2s.

Rochdale.—Extension.—To transformer house at electricity works, Dane-st., for C.B. B.S.

Toot Baldon.—Cottage.—Police cottage, for Oxfordshire Standing Joint Committee. G. T. Bennett, C.S., 8, New-rd., Oxford. Dep. £1 1s.

Wooler.—House.—At Wooler, for J. Fairnington. J. Wightman Douglas, D.S.O., L.R.I.B.A., F.S.I., 27, Bondgate Without, Alnwick.

MARCH 24.

Andover.—Cottage.—At waterworks pumping station, Smannell-rd., for T.C. B.S., Union-st. Dep. £1 1s.

Castledawson.—Additions.—Alterations and additions to New-row public elementary school, Castledawson, County Londonderry, for Rev. Monsignor Ward, P.P., V.F., Magherafelt. R. T. M'Guckin, architect, Garden-st., Magherafelt.

Dagenham.—Fencing.—Wrought-iron fencing and artificial stone coping around public convenience, for U.D.C. E. and S. Dep. £1 1s.

Dumfries.—Houses.—28 at Thornhill, for C.C. John Robson, County Clerk, County-bldgs., Dumfries.

Exeter.—Heating.—Accelerated low pressure hot water heating, etc., at Head Post Office, for H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

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Publishers, 15 North Audley Street, W.1.

Gilford.—School.—Public elementary school, for Down County Regional E.C. C. J. Love, architect, 5, Wellington-place, Belfast.

Glamorgan.—Dismantling.—Also removal of temporary building in playground at Pontyclun Council school, for C.C. D. Pugh Jones, County Architect, County Hall, Cardiff.

Rosecall.—House.—House on lands of Rosecall, for Irish Land Commission. M. Deegan, secretary, Upper Merrion-st., Dublin. Dep. £1.

MARCH 25.

Drumbeggan.—School.—Public elementary school at Drumbeggan, near Derrygonnelly, for Rev. T. Connolly, P.P., Derrygonnelly. J. Donnelly, architect, Enniskillen.

Edinburgh.—Houses.—306 houses at Restalrig housing scheme, Craigentinny estate, and 202 houses, comprising 1st development of Granton Mains housing scheme, for T.C. E. J. MacRae, City Architect.

Inverurie.—Houses.—18 in Blackhall-rd. and Kemnay-rd., Port Elphinstone, for T.C. B.S.

MARCH 28.

Beddington and Wallington.—Houses.—62 and 4 maisonettes on site adjacent to Beddington-lane railway station, for U.D.C. S. F. R. Carter, E. and S. Dep. £2 2s.

Benfieldside.—Additions.—To Council School, for Durham E.C. F. Willey, architect, 34, Old Elvet, Durham.

Hindley.—Fencing.—At housing scheme at Atherton-rd., Hindley Green, for U.D.C. O. P. Abbott, S. Dep. £2 2s.

Resolven.—Hall.—Miners' welfare hall. J. Cook Rees, F.R.I.B.A., Parade-chmbs, Neath. Dep. £1 1s.

MARCH 29.

Invergordon.—Alterations.—At post office, for H.M.O.W. Architect, 122, George-st., Edinburgh. Dep. £1 1s.

Nottingham.—Building.—Extension of Bruce-grove sub-station, for T.C. T. Wallis Gordon, City E. and S. Dep. £1.

Portmadoc.—Houses.—25 State-aided parlour-type houses, together with roads and sewers, etc., at Avenue-rd., for U.D.C. Griffith Morris, incorporated architect and surveyor, High-st. Dep. £2 2s.

Shifnal (Salop).—Alterations.—To Post Office, for H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

MARCH 30.

Bloxwich.—Houses.—Three pairs of semi-detached non-parlour type houses at Almington and Loggerheads, for R.D.C. W. L. Hind, architect, Trinity-bldgs., Hanley, Stoke-on-Trent.

Bournemouth. — Alterations. — To Head Post Office, for H.M.O.W., Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Bristol.—Building.—Builder's and plumber's work connected with the erection of Council school at Marksbury-rd., Bedminster, for T.C. C. F. W. Dening, architect, 28, Orchard-st., College Green. Dep. £2 2s.

Leyton.—Baths.—Works in connection with proposed public baths, High-rd., Leyton, E.10, comprising pile foundations, ground floors, two swimming pools and other contingent works in reinforced concrete, for T.C. A. P. Howell, B.E. Dep. £10.

Liverpool.—Houses.—9 tenement dwellings, Kew-st., for T.C. Director of Housing. Dep. £1 1s.

Wembley. — Repairs. — Alteration, repair and decoration at Vale Farm House, Watford-rd., for U.D.C. C. R. W. Chapman, E. and S. Dep. £1 1s.

MARCH 31.

***Andover.**—Houses.—In the following parishes: Shipton Bellinger and Upper Clatford, for the R.D.C. Clerk, 31, High-st. Dep. £3.

Hastings.—Extension to Municipal Hospital. B.E., 37, Wellington-sq. Dep. £3 3s.

***Hornchurch, Essex.**—Extension, Baptist Church. —Spalding & Myers, 12, New Court, Lincoln's Inn, W.C.2 Dep. £1 1s.

Huddersfield.—Houses.—3 at junction of Reinwood-rd. with Hawes-av., Quarmby, for C.B. B. E., 1, Peel-st Dep. £1 1s.

Kingston-upon-Hull.—House.—New boiler house and water tower, Mental Hospital, Willerby, for T.C. D. Harvey, A.R.I.B.A., City Architect. Dep. 17s. 6d.

Leeds.—Conveniences.—Underground public conveniences in The Headrow, for T.C. J. E. Acfield, City E.

Maldon (Essex).—Telephone Exchange, for H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Penygroes.—Houses.—Five non-parlour houses at Penygroes, for Council. R. T. Jones, architect, Midland Bank-chambs., Bangor.

APRIL 1.

Folkestone.—Housing.—20 non-parlour type on Hill-rd. housing estate, for T.C. E. L. Allman, Deputy B.E. Dep. £2 2s.

Highbury Grove (N.).—Telephone Exchange, for H.M.O.W., Contracts Branch, King Charles st., London, S.W.1. Dep. £1 1s.

Plymouth.—Flats.—(1) 56 flats at Vicarage-rd., St. Budeaux; (2) 3 flats at Moon-st., Plymouth; (3) painting of certain dwellings at North Prospect, Lower Mount Gold, Prince Rock, Vauxhall-st. Elphinstone, and Stonehall; and (4) erection of 14 concrete staircases at How, Looe and Vauxhall-st. flats, Plymouth, for T.C. J. Wibberley, City Engineer and Architect, Sun-bldgs. Dep. £1 1s each.

APRIL 2.

Belfast.—Church.—Completion of St. Peter's Church, Antrim-rd. R. M. Close, architect, 13, Donegall-sq., North. Dep. £2 2s.

APRIL 4.

Chester.—Alterations, etc.—At Upton Mental Hospital. County Architect, The Castle. Dep. £2 2s.

***Lewisham, S.E.**—Employment Exchange.—For H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Quarry Bank.—Houses.—44 on Saltwells-wood site, off Coppice-lane, for U.D.C. A. Homfray, clerk. Dep. £2 2s.

Rayleigh, Essex.—Public Conveniences.—For U.D.C. Clerk, Council Offices. Dep. £2 2s.

APRIL 5.

***Aldershot.**—Houses.—In Whyte-av. and Guildford-rd., for the B.C. Town Clerk, Municipal-bldgs. Dep. 10s.

***Leicester.** — Employment Exchange. — For H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Malmesbury.—Houses.—24 non-parlour type, for R.D.C. John C. Wade, S. and E. Dep. £3 3s.

APRIL 6.

***Wembley.**—Cottages.—54 non-parlour cottages at Perivale-lane, Alperton, for U.D.C. C. R. W. Chapman, E. and S. Dep. £5 5s.

APRIL 7.

***Barking.**—Houses.—Upney Farm Estate. C. J. Dawson, F.R.I.B.A., Clock House-chams.

APRIL 20.

Manchester.—Houses.—On the Wythenshawe estate. Housing Director, Town Hall. Dep. £2 (to City Treasurer).

Pontefract.—Adaptation.—Of premises as public elementary school, for T.C. Pennington, Hustler & Taylor, architects, Ropergate.

APRIL 22.

Galway.—Reconstruction.—Of Prospect-hill buildings and conversion of same into County Offices, etc., for C.C. M. J. Kennedy, C.S. Dep. £5 5s.

NO DATE.

Aldershot.—Reconstruction.—83 and 85, High-st. and 167 to 173, North-lane, for Corporation. Borough Sanitary Inspector.

Breconshire. — Houses. — 2 semi-detached police houses at Crickhowell, for C.C. H. C. W. Strickland, F.R.I.B.A., Watton Offices, Brecon.

Crossland Moor.—Houses.—4 houses in stone, William-st. Joe Ainley, architect and surveyor, 25, Market-st., Huddersfield.

Crownhill.—Shops.—2 semi-detached houses at Plympton, and 3 shops and dwellings at Crownhill. Andrew, Son & Denning, surveyors, 10, Princess-sq., Plymouth. Dep. £2 2s.

Drumlish.—Painting.—New Parochial House, for Rev. B. Manning, P.P., St. Mary's, Drumlish. F. Guerin, architect, 7, Lower Fitzwilliam-st., Dublin.

Fremington. — Bungalow. — Friend & Kelly, L.R.I.B.A., 30, Boutport-st., Barnstaple. Dep. £2 2s.

Hull.—Demolition.—Pulling down and clearing of site of 28 houses, etc., at Blue Bell Entry, High-st. J. Watson, chartered surveyor, Cogan-chams., Bowlalley-lane.

***Mutley, Plymouth.**—Alterations and additions to shop premises. Timothy White's (1928), Ltd., Construction Dept., 30, Chandos-st., Portsmouth.

Spittal.—Hall.—Church hall T. S. Llewellin, Haverhill, Treffgarne, Pembrokeshire.

MATERIALS, etc.

MARCH 21.

Aylesbury. — Highway Materials. — For T.C. Harold Taylor, B.E. and S.

Beckenham.—Tarmacadam.—500 tons of tarmacadam, for U.D.C. H. Storr Best, S., 36, High-st. Dep. £2.

Bilston.—Road Materials.—For U.D.C. A. F. B. Sidwick, E. and S.

Cardiff.—Castings.—Cast-Iron street casings, for T.C. Neil J. Peters, Water Engineer, City Hall.

Carmarthenshire.—Road Materials.—For C.C. T. W. Wishlade, C.S.

Chertsey.—Highway Materials.—For U.D.C. F. W. Greig, S.

Cowes.—Road Materials.—For U.D.C. J. W. Webster, E. and S.

Dover.—Ragstone.—For R.D.C. C. W. Whitewood, S., River View, London-rd.

Enfield.—Highway Materials.—For U.D.C. E. and S.

Loughton.—Shingle, etc.—For U.D.C. H. White, S., High-rd.

Tenterden.—Road Materials.—For R.D.C. W. L. C. Turner, S.

MARCH 22.

Banffsct.—Road Materials, etc.—For U.D.C. S.

Bridge.—Road Materials.—For R.D.C. B. G. Chittenden, Highway Surveyor, near Canterbury.

Hazel Grove and Bramhall.—Stone.—For U.D.C. S.

Knottingley.—Road Materials.—For U.D.C. S.

Waterloo-with-Seaforth.—Highway Materials.—For U.D.C. J. R. Fothergill, E and S.

Wembwell.—Road Materials.—For U.D.C. S.

MARCH 23.

Exmouth.—Mains.—20 tons of water mains, for U.D.C. S. Hulten, E. and S.

Kirkcudbright. — Road Materials. — For C.C. Robert Gibson, County Road Surveyor, County-bldgs.

MARCH 24.

Alton.—Highway Materials.—For U.D.C. G. H. Webb, S.

Andover.—Highway Materials.—For T.C. B.S., Union-st.

MARCH 25.

Crompton. — Highway Materials. — For U.D.C. F. T. Jones, E. and S.

MARCH 28.

Armagh.—Highway Materials.—For C.C. C.S., County Courthouse, Armagh.

Edinburgh.—Plumbing Materials.—For T.C. A. Grierson, T.C.

Rossiynlee.—Plumber's Materials.—For Midlothian and Peebles District Asylum. C. L. Addison-Smith, clerk, 19, Heriot-row, Edinburgh.

MARCH 29.

King's Lynn.—Tarred Slag.—For T.C. J. C. Matthew, B.E.

Larbert.—Paints, etc.—For Sterling District Mental Hospital. P. Y. Hutton, House Steward.

Tenterden. — Highway Materials. — For T.C. W. L. C. Turner, B.S.

MARCH 30.

Great Crosby.—Highway Materials.—For U.D.C. J. A. Wright, S.

APRIL 2.

Cairo.—Paints, etc.—For Director of Stores, Department of Public Health, Cairo. Department of Public Health, Cairo.

Clayton-le-Moors. — Highway Materials. — For U.D.C. A. Dodgeon, S.

Dorking.—Road Materials.—For U.D.C. S. S. Gettings, S.

Ramsey.—Road Materials.—For U.D.C. R. F. Serjeant, clerk.

APRIL 6.

Hayward's Heath.—Pipes.—233 tons of cast-iron socket and spigot pipes of 5-inch dia., and specials of 5-inch, 4-inch and 3-inch dia., for Mid-Sussex Joint Water Board. F. Martin, engineer, Boltro-rd. Dep. £2 2s.

APRIL 7.

London. — Building Materials. — For G.W.R. F. R. E. Davis, Secretary, Paddington Station, W.2.

NO DATE.

Aden.—Pipes.—6,400 ft. 9-in. cast-iron spigot socket pipes, for Executive Committee of Aden Settlement. Chairman, Aden Settlement, Aden.

Saltcoats.—Pipes.—230 yds. of 9-in. cast-iron main gas pipe and connections, for Saltcoats Gas Co., Ltd. J. Barbour, Engineer and Manager. Dep. 10s. 6d.

ENGINEERING, IRON AND STEEL.

MARCH 21.

Chester.—Bridge.—Demolition of old bridge over canal at Saughall-rd. and construction of new reinforced ferro-concrete arch bridge, together with other incidental works, for T.C. Charles Greenwood, City E. and S. Dep. £2 2s.

Dundee.—Steelwork.—Erection at site of King George V. wharf extension No. 2, Dundee, of a steel-framed shed, for Trustees of Harbour. J. Hannay Thompson, General Manager and Engineer, Dundee Harbour Trust, Harbour-chambs., Dock-st.

Kidderminster.—Water Supply.—For parishes of Trimpley and Habberley, for R.D.C. A. S. Northover, S., Central-chambs., High-st. Dep. £2 2s.

Middlesex.—Sewerage.—For West Middlesex main sewerage scheme for C.C. Dodd & Watson, engineers, Wellington House, Bennetts-hill, Birmingham. Dep. £5 5s.

Sheppey.—Wall.—Massed concrete sea wall approximately 200 yds. in length, on portion of Council's foreshore, opposite new boating lake, for U.D.C. R. H. Jenkins, S. Dep. £2.

South Africa.—Bridgework.—Fabricated steel bridge material, troughing, etc., required for Beaufort West—De Aar Section, Cape Town—Beaufort West Section, Klipplaat—Oudtshoorn Section, Bethal, Volksrust Section, for South African Railways and Harbours. Dept. of Overseas Trade. 35, Old Queen-st., S.W.1. (Ref. GX. 11151).

Warwick.—Sewerage.—Sewage disposal works, Longbridge, for T.C. R. Wormell, B.E. and S., 20, The Butts, Warwick. Dep. £5.

MARCH 22.

Dublin.—Reconstruction.—In steel of inner dock for Dublin Port and Docks Board. E., East Wall, swing bridge, George's Dock, Custom House Docks, Dublin, C.10. Dep. £3 3s.

MARCH 23.

Bridlington.—Extension.—Service reservoir at Bridlington in connection with scheme for extension of waterworks, for T.C. Waterworks Engineer, Marton-rd. Dep. £3 3s.

MARCH 29.

Norton.—Sewerage.—In township of Totley, for R.D.C. S. Dep. £2 2s.

Rye.—Groynes.—Six timber groynes at Winchelsea Beach, Rye Harbour, Sussex, for Rother and Jury's Gut Catchment Board. H. Farrant, Engineer to Board, Watch Bell-chambs.

MARCH 30.

Chester.—Sewage.—Settling tanks, carriers, pipe work, pump house and other appurtenant works at Bumpers-lane sewage works, for T.C. Charles Greenwood, City E. and S. Dep. £2 2s.

APRIL 5.

Galloway.—Construction.—Of contract No. 7, Clatteringshaws dam, in connection with the Galloway power works, for Water Power Co. Sir Alexander Gibb & Partners, Queen Anne's Lodge, Westminster, London, S.W.1. Dep. £10 10s.

APRIL 25.

South Africa.—Steelwork.—Structural steelwork for cargo shed at East London, for South African Railways and Harbours Administration. Dept. of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. G.X. 11242.)

APRIL 27.

Dublin.—Bridge.—Twin-leaf rolling lift bridge over entrance to George's Dock, and removal of existing swing bridge, for Port and Docks Board. E. H. Bailey, secretary, Port and Docks Office Dep. £5 5s.

NO DATE.

Aberdeen.—Tank.—30,000-gallon segmental iron water tank and deep well pump. Tawse & Allan, civil engineers, 10, Bon-Accord-sq., Aberdeen.

ROAD, SEWERAGE, AND WATER WORKS.

MARCH 21.

Beckenham. — Tar-spraying. — Tar-spraying of highways, for U.D.C. H. Storr Best, S., 36, High-st. Dep. £2.

Bradford.—Widening.—Of part of Haworth-rd., for T.C. City E. and S. Dep. £1 1s.

Bromley.—Foundations.—Laying approximately 2,460 sq. yds. of reinforced concrete road foundation, including necessary excavation, at College-rd., for T.C. Harold Cliffe, B.E. Dep. £1 1s.

Littleborough.—Sewering.—150 lin. yds. or thereabouts of 24 in. earthenware sewer with manholes, etc., in Church-st. and Stubley Mill-rd., for U.D.C. G. F. Wild, S.

London.—Paving.—New wood block paving on reinforced concrete foundations, concrete roadway and footway paving in Camberwell-rd. (part of), Peckham-rd. (part of), Grove-vale, Marlborough-rd. and Lomond-grove (footways only), for Camberwell B.C. W. Bell, B.E. and S.

North Riding.—Surface.—900 miles of county roads, for C.C. C.S., Northallerton.

MARCH 22.

Birmingham. — Sewer. — Making-up of Gainsborough-rd., Raymond-av. and Fairview-av., Perry Barr, for T.C. H. H. Humphries, City E. and S. Dep. £2.

Enfield.—Making-up.—Of (a) Monastery-gdns.; and (b) Uvedale-rd. (part 2), for U.D.C. H. R. Crabb, E. and S., Percy House, 7, Little Parkgdns. Dep. £2 2s.

London.—Paving.—Camberwell-rd. (part of); Peckham-rd. (part of); Grove Vale; Marlborough-rd., and Lomond-grove (footways only), for Camberwell B.C. W. Bell, B.E. and S.

Prestwich.—Making-up.—Also draining of Bland-rd. and Hilton-drive, for U.D.C. H. T. Ainsworth, E. and S. Dep. £1 1s.

MARCH 23.

London.—Paving.—Supplying and laying of creosoted wood paving blocks, for Lambeth B.C. Osmond Cattlin, B.E.

Reigate.—Surfacing.—Single coat stone filled asphalt surfacing on existing road surface from disposal works southwards to Irrigation-rd., approximate area 3,200 yds., for T.C. G. G. Sanderson, B.S. Dep. £1 1s.

Surbiton.—Surfacing.—Providing and laying single-coat asphalt, for U.D.C. H. T. Mather, E. and S. Dep. £1.

MARCH 28.

Hitchin.—Main.—Laying of 896 yds. of 12-in. c.i. syphon main and contingent works, for U.D.C. A. P. Ruscoe, clerk. Dep. £2 2s.

Merton and Morden.—Roads.—Surfacing carriageway, Green-lane and Martin-way, Merton; constructing footpaths and surfacing with asphalt carpet in Morden Hall-rd.; widening works in Green-lane, Morden; construction of soil sewer in London-Worthing-rd.; surface water culvert in London-Worthing-rd.; water sewer, etc., in Wandle-rd., for U.D.C. G. Jerram, A.M.I.C.E., E. and S.

Tunbridge Wells.—Roads.—Additional roads and sewers in connection with Rusthall Grange housing estate, for T.C. H. P. Bishop, E.E. and S. Dep. £2 2s.

MARCH 31.

West Sussex.—Tarring.—Surface tarring of approximately 2,250,000 sq. yds. of county roads with refined tar, for C.C. H. W. Bowen, C.S., Southgate House, Chichester.

APRIL 2.

Dorking.—Sewers.—Surface water sewers, Chart-lane, Dene-st. and Ansell-rd., for U.D.C. S. S. Gettings, S. Dep. £2 2s.

Haywards Heath.—Mains.—6,500 lin. yds. of 5-in. dia. cast-iron water mains, with valves and other works incidental thereto, for Mid-Sussex Joint Water Board. F. Martin, E., Waterworks Offices, Boltro-rd. Dep. £2 2s.

APRIL 4.

Acton.—Roads.—Roads and sewers in connection with proposed flats in Wales Farm-rd., for T.C. W. G. Cross, B.E. Dep. £2 2s.

APRIL 6.

***Alperton.**—Sewerage Work.—At Perivale-lane, for the Wembley U.D.C. Engineer and Surveyor, Council Offices, Wembley. Dep. £2 2s.

APRIL 7.

London.—Paving.—Forming and paving of portion of Begbie-rd., for Greenwich B.C. B.E. and S.

APRIL 15.

Norden.—Making-up.—Woodgate-av., Oxford-av., passage at rear of 48-62, Bury-rd., for U.D.C. Percy Whittaker, S.

Public Appointments

MARCH 21.

***East Grinstead.**—Clerk of Works required by the U.D.C. Clerk, Council Offices, London-rd.

MARCH 28.

Chichester.—County Architect required by the West Sussex C.C. Clerk, County Hall.

MARCH 31.

***London.**—Clerk of Works required by Westminster City Council. Town Clerk, Westminster City Hall, Charing Cross-rd., W.C.2.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council R.D.C. for Rural District Council; E.C. for Education Committee; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

Aberdeen.—E.C. of C.C. decided to proceed during 1932-33 with erection of new school and schoolhouse at Cluny, and alterations and extensions to St. Fergus School (£2,825 inclusive), and also new combined classroom and workroom at Barthol Chapel (£626 19s. 2d.).

Aberdeen.—Tawse & Allan, architects and civil engineers, Bon-Accord-sq., preparing plans for shops for Northern Co-operative Society at corner of King-st. and School-rd.

Airdrie.—Reconstruction at County House-bldgs., Old Cotton Works, Aitken-st. J. Scotland & Son, architects, Broomknoll-rd.

Alloa.—Housing schemes at Smithfield-lane and Medwyn-place. R. Cairns, Burgh Architect.

Ashington (Northumberland).—County Bridges and Roads Committee informed U.D.C. that provision being made in estimates for Stakeford Bridge improvement scheme to cost £12,000.—U.D.C. instructed S. to obtain estimates for houses on North Seaton-rd. site.

Ashton-under-Lyne.—T.C. propose 60 additional houses at Higher Hurst. Plans by B.S.

Banff.—T.C. to proceed immediately with three blocks of 4 houses, each of three apartments, and one block of 4 houses, each of four apartments, on site at Morrison-place.

Barnes.—U.D.C. recommend that plans for 14 houses be approved, and application made to M.H. for sanction to borrow £9,500 for erection.—Plans passed: shops, 413-415, Upper Richmond-rd., Marrable Brothers.

Barrow-in-Furness.—J. Atkinson, 11, Market-st., Dalton-in-Furness, architect for club premises in Hindpool-rd. for Committee of British Working Men's Institute

Birkenhead.—Herbert J. Rowse, F.R.I.B.A., architect, India-bldgs., Water-st., Liverpool, submits scheme for flats in Camden-st. area for T.C.

Blackpool.—Marion Ward Women Unionists' Association (Hon. Sec., Mrs. S. Wilkinson) propose headquarters at Marton.

Blyth.—T.C. to proceed with further 100 houses to plans by L. Leeper, B.E.—Sanction received from M.H. by T.C. to 50 houses for aged people. L. Leeper, B.E.

Bolton.—Co-op. Society, Jubilee-bldgs., Bark-st., propose new branch stores in Wigan-rd. Plans by T. E. Smith & Son, Central-chams., Fold-st.—Magee, Marshall & Co., Ltd., Crown Brewery, propose additions of "Lever Arms Hotel," Nelson-sq.

Bolton.—Leach's Brewery Co., Ltd., Hammond-st., proposing alterations at "Albert Hotel," Derby-st. T. E. Smith & Sons, architects, Central-chams., Folds-rd., preparing plans.

Brandon and Byshottles (Durham).—U.D.C. are considering proposal to join with Durham U.D.C. and Durham R.D.C. in joint hospital scheme.

Brighton.—We understand that a £250,000 nursing home is to be built on Brighton front.

Bristol.—Housing Committee of T.C. propose to invite tenders for about 100 houses in Bedminster district.—Committee recommend Council to authorise construction of additional roads and sewers on Knowle and Bedminster estate to provide for further 600 houses.

Bury.—Alterations and improvements to be made to premises at Radcliffe for British Legion. Architect, A. Brocklehurst, Derby-chams., Fleet-st.

Carlisle.—General Purposes Committee authorised City S. to erect garden entrance to Rickerby-pk. by direct labour at £5,000. Plans by E. Prentice Mawson, F.R.I.B.A.—Site for milk depot been secured by Carlisle C.W.S. Plans by C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne.

Carlton-in-Coverdale (Yorks).—It is proposed to proceed with institute. Rev. F. C. Giddnes, chairman of trustees.

Castleford.—E.C. to acquire site at rear of "Keel Inn" for nursery school.

Catterick Camp (Yorks).—During the present year it is proposed to spend £28,500 on reconstruction work at camp.

Cefn.—Co-operative Society, Ltd., proposes model dairy.

Chapelhall.—Lanarkshire C.C. to erect 40 houses. P. C. Smith, architect, Clydesdale-st., Hamilton.

Chepping Wycombe.—T.C. approved: 6 houses, Totteridge-cres., F. Maunder; 10 houses, New-rd., J. Robertson; 14 houses, Melbourne-rd., Sandell & Wren; 25 houses, Lane End-rd., P. W. Lowe; alterations, "The Swan" public-house, H. & G. Symonds, Ltd.; 8 houses, Southfield-rd., A. Buckle; alterations, "Victoria" public-house, Wheelers Wycombe Breweries; premises, Frogmoor, Montague Burton, Ltd.

Chesterfield.—T.C. approved plans for municipal abattoir.

Chester-le-Street.—Efforts being made to raise funds for Salvation Army hall to cost £3,500.

Chester-le-Street.—M.H. sanctioned borrowing of £16,634 by U.D.C. for 52 houses.

Choppington (Northumberland).—Choppington and District Nurses' Association to apply to Central Welfare Committee for grant towards building nurses' home.

Cleckheaton.—Spenborough U.D.C. propose 50 houses on Frithcliffe housing estate. A. Rothera, S.

Clelland.—Lanarkshire C.C. to erect 50 houses. Peter S. Smith, architect, Clydesdale-st., Hamilton

Colne.—R. S. Pilling, Colne-lane, architect for reconstruction of Tower-bldgs., recently damaged by fire, for Colne Weavers' Association.

Colne.—T.C. propose 76 houses and 12 bungalows on housing estate at £26,640. Plans by B.S.

Coventry.—T. R. J. Meakin & Son, 11, Warwick-row, are architects for billiards hall on Lockhurst-lane for E. O. Shanks & Sons, Ltd.

Crookhill.—C.C.'s Housing Committee propose extensions at Crookhill Hall receiving home.

Darlington.—R.D.C. to build 12 houses at Hurworth. Architects, Cayley & Jarvis, 44, High-row. Tenders invited.—Joseph Pese, Ltd., acquired old-established business of J. M. Smythe, Horse Market, and it is proposed to make a reconstruction of premises.

Dewsbury.—C. H. Marriott, Son & Shaw, architects, Church-st.-chams., preparing plans for parish hall at Altofts, near Normanton, for Vicar, Rev. W. E. Knifton, and Churchwardens.

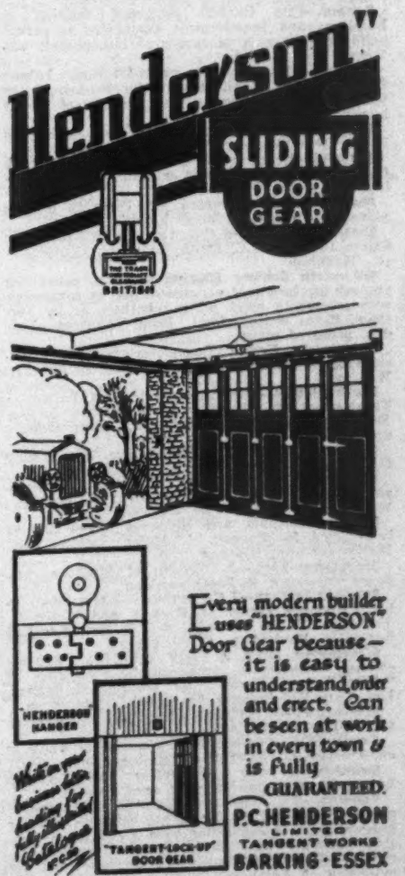
Doncaster.—B. of E. written to E.C., stating they were prepared to consider individual and detailed proposals regarding projects for next financial year; extension of Intake School, new school in Wheatley district, and alterations and additions to premises formerly occupied by Holmes' School, for rehousing of School of Art.—Bishop of Sheffield seeks permission to erect new church and Sunday schools on Carr House housing estate. Plans being prepared.

Doncaster.—Justices approved plans for rebuilding "Sun Inn," Bentley; erection of licensed premises, Garden-lane, Conanby, for T. A. Groves; billiards hall at Church-rd., Stainforth.

Dudley.—Trustees of Methodist Society selected site in Lime Pit-lane for church.—Worcester Diocesan Board acquired site in Laurel-rd. for church.

Dunbar.—Corporation to erect 24 flatted houses at £6,500. D. W. Murdoch, Corporation Architect

Dunoon.—Corporation to erect 16 houses in Argyll-st. W. Rodger, architect and surveyor, Town Hall, Dunoon



Dunoon.—Reconstruction and additions to Glenwage houses at £3,260. J. McNair, architect, Alexandria-place, Rutherglen.

Eastfield.—Lanarkshire C.C. intend to extend Eastfield public school. John Stewart, architect, Albert-st., Motherwell.

Essex.—T.C. propose 108 houses, Peel-green, and South East estates. T. Rice, A.M.I.C.E., B.S.

Edinburgh.—Reconstruction and additions 96, 97 to 99, Shandwick-place. Maclennan and Cunningham, architects, Charlotte-st.

Ellesmere Port.—U.D.C. propose 75 additional houses on housing estate. Plans by B.S.

Epworth.—Isle of Axholme branch of National Farmers' Union considering scheme for milk, cheese and butter factory.

Featherstone.—U.D.C. propose 80 houses.

Fleetwood.—Number of beach bungalows to be built by U.D.C.

Fylde.—R.D.C. approved E. G. Sergeant, 6 houses, Bryning-rd., Wrea Green.

Gateshead-on-Tyne.—The Licensing Justices approved rebuilding of "Wylam Hotel," Wylam-st., for J. P. Morrison. Architect, J. W. Corking, 36, West-st., Gateshead. Tenders not been invited.

Glasgow.—Additions for Bank of Scotland at Crown-st. Balfour & Stewart, architects, 110, Blythswood-st.

Glasgow.—Reconstruction and additions at 194, St. Vincent-st., for Paramount Film Co., Wardour-st., London, W.1. J. Reid, architect, 79, West Regent-st.

Glossop.—T.C. to erect 10 houses. G. Faulds, B.S

Greenock.—Corporation to proceed with new Sinclair-st. and Carwood Hut Area housing scheme. D. Henderson, Housing Director and Architect.

Greenside.—Nurses' home proposed to replace existing hut.

Greenock.—Renfrewshire C.C. to erect school at Ladyburn. John Davidson & Son, architects, High-st., Paisley.

Guisborough (Yorks).—R.D.C. approved plans for alterations to "Nag's Head Inn," Lazenby.

Halifax.—Health Committee recommend, subject to approval of M.H., and to acceptance of tenders, to provide new isolation hospital on Northowram Hall estate, at £56,000.

Halifax.—Eskrow & Baldwins, Ltd., Clark Bridge Mills, propose extensions to mill premises. Clement Williams & Sons, L.R.I.B.A., architects, Permanent-chams., Commercial-st.

Hartlepool.—Funds being raised for Sunday schools for Independent Church.

Hebburn-on-Tyne.—Council to acquire land near Hedgeley-rd. for housing purposes. T. Paterson, S.

Hebburn-on-Tyne.—Licensing Justices sanctioned G. Conlin to erect public-house corner of Howe-st. and Victoria-rd. at £3,600. Plans by J. H. Morton & Sons, Martins Bank-chams., Fowler-st., South Shields. Tenders not yet invited.—Tenders not been invited for school for U.D.C. to cost £12,000. Plans by T. A. Page & Sons, 67, King-st., South Shields.—U.D.C. approved plans by Hawthorn, Leslie & Co., Ltd., for alterations to café at corner of Ellison-st. and Lamport-st.

Heswall (Ches).—Local branch of British Legion propose headquarters at £2,000 to £3,000.

Hollingbourne.—R.D.C. to invite tenders for houses at East Farleigh.

Hornchurch.—Catholic Authorities propose elementary school on Hornchurch-rd. to accommodate 400 children. Architects, Burles, Harris & Colline, 28, Clement-st., Southend-on-Sea.

Houghton-le-Spring.—U.D.C. adopted scheme prepared by S. for clearance of slum property in Newton area.

Iriam.—U.D.C. propose 50 houses on Higher Iriam site and 50 houses on Cadishend housing estate. Plans by S.

Isle of Wight.—R.D.C. to build 6 houses at Kenning, Whitwell.—Council also to purchase land at Niton for housing.

Keighley.—R. P. Broster & Sons, architects, Craven Bank-chams., prepared plans for 25 houses on Colenso-walk and Colenso-way, for W. & H. Whitaker.

Keighley.—T.C. propose pavilion in Devonshire-pk.

Langley (Bucks).—Large site at Langley, Bucks, has been bought on behalf of a Czechoslovak firm, Messrs. Adolf Pasold & Son, on which the firm propose to build a factory. Architects are Wallis, Gilbert & Partners, 29, Roland-gardens, South Kensington, S.W.7. The building contract has not yet been placed.

Law.—Lanarkshire C.C. to erect 40 new houses. P. C. Smith, architect, Clydesdale-st., Hamilton.

Loadgate (Durham).—Application to be made to Central Welfare Committee by Eden Colliery Welfare Committee for £560 for pavilion and entrance gates at recreation ground. J. Robinson, secretary.

Leeds.—F. L. Charlton prepared plans for extensions to St. Mark's House, Woodhouse-lane. Tenders invited.—Sutton Dwellings Trust to build 270 houses on site fronting Selby-rd at Halton. Plans by Chorley, Gribbon & Foggitt, architects, Park-place. Tenders invited.

Liverpool.—Plans passed by T.C.: Assembly hall, Dundonald-rd., A. Brocklebank & Co.; 44 tenements, Queen Anne-st., for Corporation; 10 houses, Westfield-rd., and 6 houses, Southfield-rd., W. T. Clarke, for T. Percy; alterations to licensed premises, 82, Pontenay-st., H. E. Davies & Son, for Bent's Brewery Co., Ltd.; 14 houses, Halewood-close, N. Griffiths, for Woolton Land Development Co., Ltd.; 48 houses, Queensmere-rd., E. Russell-Taylor & Son; dance room, Barkhill-rd., Quiggin & Gee, for Miss S. M. Marsh; alterations to premises, Brownlow-hill, C. J. Doyle, for Metropolitan Cathedral Building Fund; 6 houses, North-drive, Wavertree, Richard Owens & Son, for W. Williams & Son; warehouse and bridge over canal, Clement-

* See also List of Contracts, Competitions, etc

st., Tate & Lyle; alterations and addition, Cheapside, Campbell & Honeybourne, for the Peerless Refining Co., Ltd.; public-house, 19, Fontenoy-st., Medcalf & Medcalf, for Threlfall's Brewery Co., Ltd.; alteration to form club premises over grand stand, Townsend-lane, Clubmore, Richard Owens & Son, for Liverpool Greyhound Racing Club, Ltd.. 40 houses, Lindale-rd., and 22 houses, Middleton-rd., H. C. Killender, for J. H. Riding; alterations to licensed premises, 3, Commercial-rd., and 149, Upper Beau-st., H. E. Davies & Son, for Bent's Brewery Co., Ltd.; 4 shops and offices, St. Mary's rd., A. E. Shennan, for Miss Dorothy Green, alterations to licensed premises, 58, Arley-st., and 80, Leeds-st., H. E. Davies, for Bent's Brewery Co., Ltd.; reconstruction of ground floor, 104-106, London-rd., G. Bradbury & Sons, for Barclays Bank, Ltd.; new cinema, Longmoor-lane, corner of Mossnits-lane, Lionel A. G. Pritchard, for P. S. Jones; church, Pilch-lane, Weightman & Bullen, for Rev. Father McKenna; stables and garage, Prescot-rd., Evan Roberts, for the Liverpool Co-operative Wholesale Society, Ltd.

Lofthouse.—Lofthouse Park Estates Co. propose to develop Park Estate as housing estate.

London (Bermondsey).—L.C.C. sanctioned borrowing by B.C. of £19,000 for Rotherhithe-st. (East) clearance scheme.—M.H. approved scheme for 6 flats and 2 cottages, 219,233, Bermondsey-st.

London (Chelsea).—Drainage plans passed:—Economic House Drainage Repairing Co., 1 house, 15, Tryon-st.; Triggs & Co., hospital, St. Stephen's Hospital, Fulham-rd.

London (Fulham).—B.C. recommend £1,670 for erection, cabling and equipment of sub-station on ambulance station site in North End-rd. in accordance with estimate of Mains Superintendent. —Plans passed: F. Pike, one-story waiting room and office building at 1-7, Sotheron-rd.

London (Lewisham).—B.C. received from L.C.C. lease of site for convenience on L.C.C. Bellingham housing estate.—Council recommend that subject to work being carried out to satisfaction of B.S., Council approve extension of footbridge over Southern Railway, taking footpath leading from Baring-rd. to Beigate-rd.—Plans passed: H. Weston & G. Bidwell, drain market upon site at rear of "Prince of Wales" Picture Playhouse, High-st., Lewisham; G. T. Harman, 6 houses, Daneby-rd.; J. P. Briggs, garages, Old-rd., Lee; G. T. Harman, 20 houses, Stillness-rd.

London (Streatham).—L.C.C. recommend 8 houses upon site of Leigham Court-rd., for H. F. Buchan & Co.

Macclesfield.—Cartwright & Sheldon, silk manufacturers, Paradise Mills, Park-lane, proposing extensions to mills in Vincent-st.

Manchester.—Board of Management of Manchester Royal Infirmary, Oxford-rd., propose additions to hospital block in Nelson-st., Chorlton-upon-Medlock. Plans by Thomas Worthington & Sons, FF.R.I.B.A., architects, 178, Oxford-rd.

Manchester.—H. E. Kelvey, 475, Stretford-rd., Old Trafford, proposes alterations to premises. Plans in course of preparation under supervision of Mr. Kelvey.—Managers of St. Mark's C.E. School, Gorton, propose additions to buildings. Provision for physical training to be made at Openshaw C.E. school.—School site adjoining Roundwood at Wythenshawe is to be acquired. Senior school erected on housing estate, Victoria-av., East Blackley. Plans prepared in Architects' Dept., Education Offices, Deansgate.

Manchester.—J. T. Scott, builder, 32, Beech-rd., Chorlton-cum-Hardy prepared plans for 8 houses and shops on Gawsworth-av. and Parrswood-rd., South Didsbury.—Sparkes & Stephens, Ltd., builders, Manchester-rd., Chorlton-cum-Hardy, propose 47 houses, Manchester-rd., Stratton-rd., Dacre-av. and Dunrobin-av., Chorlton-cum-Hardy.—John Harrop, Ltd., 91, Piccadilly, propose shop and showrooms on site of existing building at 92 to 96, Stretford-rd., Hulme. Plans by T. Townend, architect, Fleece-st., Rochdale.

Millom.—Territorial Association of Cumberland and Westmorland propose drill hall at Moor-rd. Plans by Major G. Fraser, F.R.I.B.A., Wellington-bldgs., The Strand, Liverpool.

Nelson.—T.C. propose bridge at Whiteough.

Newburn-on-Tyne.—U.D.C. to negotiate for land at Bell's Cross for 70 houses.

Newbury.—Additions to "Axe and Compasse" public-house, Cheap-st. Plans by architects to South Berks Brewery Co., Ltd., Castle Brewery, Reading.

Newcastle-on-Tyne.—City E.C. to recommend Council to seek compulsory powers to acquire land on Westgate Hill for secondary school.—City Council approved:—16 houses, Tyne Tees Shipping Co., Marshall & Tweedy, 129, Pilgrim-st., architects; 16 houses near Thornitree-drive, H. W. Kaye, architect, Monkseaton; 8 houses in Southmoor-rd., J. Armstrong, architect; 9 houses in Wingrove-rd., A. H. Oxnard, architect, 6, Beech-grove, Whitley Bay.—Dixon & Scott, Ltd., propose garage at corner of Percy-st. and Nixon-place. Architects, Dixon & Bell, Pearl-bldgs. Contract not placed.—City Council to convert property in White-st. into flats. F. H. Holford, City Architect.—City Council passed plans for alterations to R.C. school near Pelton-st. for Rev. G. McBearty. R. Burke, 12, Grey-st., architect.—Plans prepared by Dixon & Bell, Pearl-bldgs., for alterations of property near Haymarket-lane into shops, offices and flats. Contract not placed.

Newcastle-on-Tyne.—Tenders not been invited for alterations to premises of Alfred Appleby, Ltd. C. S. Errington, 21, Grainger-st. West, architect. —E.C. received sanction from B. of E. to borrow £21,315 for site in West End for secondary school. —Plans for bakery and premises proposed at Fenham by Kirk & Dickinson been approved. Harrison & Ash, Ellison-place, architects.—Corporation approved plans for alterations to R.C. schools in Pelton-st. and Pott-st. Architect, R. Burke, 17, Grey-st.—Plans for alterations and new shop fronts to Mr. Levine's premises, 137-139, Northumberland-st. been approved by City Council. Architect is J. Walton Taylor, St. John-st.

New Mills.—U.D.C. propose 25 houses on housing estate.

Newton Abbot.—Alterations to "Commercial Hotel." Plans by surveyor to H. & G. Simonds, brewers, of Tamar Brewery, Devonport.

Northwich.—Managers of St Wilfred's R.C. School propose extensions to buildings. Rev. Dennis Cregan, P.P.

Ossett.—John Smith's Tadcaster Brewery, Co., Ltd., propose alterations at "Cock and Bottle" hotel.

Oswestry.—F. W. Soames & Co., The Brewery, Wrexham, propose alterations to "Queen's Hotel." Plans by E. F. Davies, architect, Argyle-chams., Argyle-st., Wrexham.

Paisley, South.—At Stoney Brae, Potterhill, electrical sub-station for Clyde Valley Electrical Co., 200, St. Vincent-st., Glasgow, to be built. J. Taylor Thomson, architect, 212, Bath-st., Glasgow.

Paisley.—Extension potato stores and garage for Galbraiths Stores, Ltd., at Back Sneddon-st. Cook & Hamilton, architects, Gilmour-st.

Port Glasgow.—Reconstruction and extension to Co-operative Society's main premises in Princes-st. W. Mercer, architect, Scottish Co-operative Buildings, Paisley-rd., Glasgow.

Portsmouth.—T.C. approved: P. T. Price, 6 houses with garages, Brecon-av.; V. Dye, 10 houses, Stanley-av.; Portsmouth District Rechabites, public hall, alterations, 68, Victoria-rd. North; G. & W. Mitchell, 24 houses and garages, Chatsworth-av.; Portsmouth Hebrew Congregation, additions, one Synagogue House, Queen-st.

Preston.—Board of Management of Preston Royal Infirmary propose extension of pathological dept.

Retford.—T.C. propose modernisation of Court House.—Managers of National Church of England Schools (Vicar, the Rev. A. Parkinson) propose reconstruction of buildings to meet the requirements of Board of Education. Architect, W. Southall, Chapel Gate.

Riccall.—R.D.C. propose 16 houses at Barlby.—Council instructed Clerk to find sites for housing.

Ripley.—U.D.C. to erect 40 houses, Porter House estate at £344 15s. each.

Rothbury.—U.D.C. approved alterations new Masonic hall at Sharpe's School.

Rothbury (Northumberland).—U.D.C. secured site for convenience.

Royston.—U.D.C. received M.H. sanction to 14 houses suitable for aged people in Station-rd.

Rugby.—U.D.C. approved: 8 houses, Benn Farm, Richmond-rd., R. Cash.

Ryhope (Durham).—P.C. to seek sanction from Ministry to shelter for miners.

St. Albans.—R.D.C. have applied to M.H. for sanction to 36 houses at Colney Heath.

Salford.—City Council confirmed decision of Buildings and Improvement Committee to permit building of church at corner of Liverpool-st. and Weaste-lane, Weaste.

Sheffield.—Authority been given for Direct Labour Department to submit estimate for 100 non-parlour houses of new type as first portion of Totley housing estate.

Sheffield.—Corporation to erect convenience at Handsworth recreation ground at £400.

Sheffield.—Members of Sickleholme Golf Club (Secretary, F. Bye) propose extensions to golf clubhouse at £430.

Shelf.—Council instructed Mr. Oddy to prepare plans for 4 houses at Wade housing site.

Shotts.—Lanarkshire C.C. to erect 48 houses for Shotts Parish, P. C. Smith, architect, Clydesdale-st., Hamilton.

Silksworth Colliery (Durham).—Local committee applied for increased accommodation in connection with scheme to erect pithead baths. J. H. Forshaw, Mines Welfare Dept., Dean Stanley-st., London, prepared plans.

Smethwick.—Health Committee propose extensions at isolation hospital at £6,000. R. Fletcher, D.S.

South Shields.—Contract for shops at Palladium Theatre not yet placed. J. H. Morton & Son, Martin's Bank-chams., Fowler-st., South Shields, architects.

Surotherough.—Bentley R.C. urging West Riding C.C. to erect elementary Council school.

Stansted.—R.D.C. propose 20 houses at Birchanger; 6 at Elsenham; 10 at Great Hallingbury; 10 at Manuden; and 24 at Stansted.

Stirling.—Weights and Measures offices are to be erected for Council. J. Miller, architect, 15, Blythswood-sq., Glasgow.

Stockton-on-Tees.—J. Nelson, of Stockton, proposes warehouse in Bonthouse-lane.

Stockton-on-Tees.—T.C. passed:—alterations to bank premises corner of High-st. and Finkle-st., Yorkshire Penny Bank, Ltd.; 20 semi-detached houses in Burford-av., C. Wright.

Stourbridge.—Scott & Clark, F.R.I.B.A., Regent-chams., Wednesbury, architects for rebuilding of "Mitre" hotel, High-st., for Mitchells & Butlers, Ltd., Cape Hill Brewery, Smethwick, Birmingham.

Sunderland.—R.D.C. applied to M.H. for sanction to build 100 bungalows.

Surrey.—C.C. received M.T. approval of whole of construction of Guildford-Godalming by-pass road.

Swindon.—Housing Committee proposes 53 houses for accommodation of aged persons.

Taunton.—T.C. approved acceptance of tenders amounting to £11,151 for school buildings and for improvements in connection with E.C.'s reorganisation scheme.—Council also approved recommendation of Housing Committee to purchase land for extension of Lambrook housing estate, and land at Bishop's Hull for further Council houses.

Thornaby-on-Tees.—Scheme under consideration for Baptist Sunday school in Thorntree-rd.

Tiverton.—Work involving between £4,000 and £5,000 for out-patients' waiting-room, five or six staff bedrooms and new and up-to-date kitchen, among other things, to be started shortly, according to report of Management Committee of Tiverton Hospital.

Wakefield.—Corporation propose 3 shops with residential flats at junction of Broadway and Dewsbury-rd., also at Hall-rd., Snapethorpe.—Two hundred houses to be erected, half by direct labour, the remaining 100 by tender. Plans by Housing Architect.—Taylors, of Northgate, propose warehouse. Plans by Kaye & Lunn.—C. F. Napper to erect 56 houses at Agbrigg-rd.

Wallsend-on-Tyne.—T.C. to proceed with adaptation of Castner Institute into a public library. Plans by J. Blench, B.E.—T.C. appointed subcommittee to consider a scheme for omnibus shelters.—Sanction to borrow £5,717 and £11,627 for 60 flats on Archer-st. site been received by T.C.

Walsall.—Holts Brewery Co., Ltd., 76, Holt-st., Birmingham, proposing licensed premises off Bentley-lane. Plans by H. E. Farmer, F.R.I.B.A., 57, Colmore-row, Birmingham.—T.C. to erect in conjunction with Health Committee new borough mortuary at £2,700.

Walsall.—The R.D.C. propose 30 houses at Rushall. Plans by S.—Jeffries & Shipley, architects, of King's Court, Upper Bridge-st., are preparing plans for new school for mixed scholars of Spring Hill. Cost £19,500.

Warrington.—Co-operative Society, Ltd., propose extensions to Central Offices. Cairo-st., and a rearrangement of departments.—Co-operative Wholesale Society, Ltd., Balloon-st., Manchester, proposing extensions to printing works in Barbould-st. Plans in Architects' Department, Co-operative Wholesale Society, Ltd., Balloon-st., Manchester.

Waterfoot.—W. A. Birtwisle, Albion Mills, acquired Victoria Mills, Clough Fold, for extensions to business.

Wellington (Salop).—Birmingham and Midland Motor Omnibus Co., Ltd., Birmingham, propose garage to accommodate 20 vehicles in Charlton-st.

West Bromwich.—Lichfield Diocesan Trust acquired site on Friar Park housing estate for church and Sunday school.

West Riding.—Mental Hospital Board propose admission hospital at Wadsley Institution, Sheffield. Cost £60,000.—C.C. propose bridge at Grindleton.

Whitburn (Durham).—Local golf club propose pavilion.

Whitecraigs.—Eight-roomed house at Erskine-rd. J. Caldwell, architect, 290, Kilmarnock-rd., Newlands, Glasgow.

Wickham Market.—East Suffolk E.C. recommend erection of new area school for seniors at £12,500.

Wingate.—Seaham and Horden C.W.S. taking steps to rebuild premises of Wingate branch.

Whitley Upper (Yorks).—U.D.C. acquiring site for 20 houses. Tenders invited.

Willington.—Extensions proposed by Hood, Haggie & Son, Ltd., to trawl twine dept. Plans approved by Wallsend T.C., and it is understood Glasgow Steel Roofing Co., Ltd., Glasgow, will carry out contract.

Wolsingham.—Alterations to cost £1,500 are proposed to "King's Head" hotel.

Workington.—T.C. considering slum-clearance scheme for Duke-st. area.

Yarmouth.—T.C. recommend fencing west side, and £2,000 for filling up building sites fronting Beatty-rd. and Hawkins-av.—Additional groynes are to be constructed on North Beach and South Beach at £8,940.

Yeadon.—U.D.C. propose 80 houses on Whackhouse estate. Plans by S.—L.M. & S. Railway Co. propose reconstruction Newlay Bridge.

York.—P.A.C. propose to acquire St. Hilda's Home Office School, Lowther-st., for conversion into central home for children and to convert existing home at Haxby-rd. for annexe to nurses' home. F. W. Spurr, City S.

FIRES.

North Shields.—Damage been done to Bainbridge & Son's premises in Bedford-st. by fire, estimated at £30,000.

NEW CINEMAS

Darlington.—Tenders will be invited at an early date for the construction of a cinema at Bondgate, to be known as the "Majestic" and to cost £21,000. Plans are by Mr. Joshua Clayton, High Row-chambers, Darlington.

Portland.—The tender of Messrs. Jesty & Baker, contractors, of Weymouth, has been accepted for the erection of the cinema at Fortuneswell. To hold 800 persons, the plans have been prepared by Mr. G. A. Andrews, of Weymouth.

Southampton. — Mr. Robert Cromie, F.R.I.B.A., 35, Baker-street, W.1. has prepared plans for a cinema for Councillor F. J. Spickernell on a site in the city. No contract has yet been let.

South Shields.—Damage to the extent of £15,000 was done to the Grand Electric Theatre, in Ocean-road, by fire. The building was completely gutted. The proprietor is Mr. W. R. Bolam.

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.

[PRINCIPAL CHANGES OF THE WEEK.—No alterations are recorded this week.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 3 6
Second Hard Stocks	3 18 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Bettons, at King's Cross	2 11 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 13 3	Bo. Bullnose	9 15 0
Do., Bullnose	3 5 3	Blue Wire Cuts	7 5 0
White Midhurst Facing Bricks (delivered London site)			£ s. d.

Best Stourbridge Fire Brick:—
2½ in. ..... 8 11 0 3 in. 10 3 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	21 0 0	D'blo Str'tch'rs	29 10 0
		D'blo Headers	26 10 0
Headers	20 10 0	One Side and two Ends	30 10 0
Quoins, Bullnose and 4½ in. Flats	27 10 0	Two Sides and one End	31 10 0
		Splays, and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours Hard Glaze £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	1 11	3 in. per yd. super	2 9
2½ in. " "	2 4	4 in. "	3 6

	s. d.	
Thames Ballast	8 0 per yd	delivered 2 miles radius Paddington
Pit Sand	11 0 " "	
Thames Sand	11 0 " "	
Best Washed Sand	11 6 " "	
½ in. Shingle for Ferro-Concrete	8 6 " "	
¾ in.	11 0 " "	
1 in. Broken Brick	10 6 " "	
Fan Breeze	8 0 " "	

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test

In Jute Sacks (11 to ton)	£2	4	9 to	£2	6 9
In Free Paper Bags (20 to ton)	2	6	0 to	2	8 0

Alongside Vauxhall in 80 Ton Lots

Jute Sacks (11 to ton)			1 17 9
Free Paper Bags (20 to ton)			1 19 0
Ferrocrete per ton extra on above			0 7 6
Vitocrete per ton extra on above			0 7 6
Lightning Brand Aluminous Cement in Jute Sacks (20 to ton)	5	2	9 to 5 8 3

NOTE.—Jute Sacks are charged 1s. 6d. each and credited 1s. 6d. each nett if returned in good condition within three months carriage paid.

Super Cement (Waterproof) Paper Bags free	3 16 0
Ciment Fondu (F.O.R. Works)	4 15 0
Roman Cement	6 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" Pink	5 10 0
Plaste Coarse, Pink	3 0 0
" White	3 12 6
" Fine	4 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
BEER STONE—RANDOM BLOCK— Free on rail at Seaton Station per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½

Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.

PORTLAND STONE—
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube 4 4½
Do. do. delivered on road wagons at above stations, per ft. cube 4 5½
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

CHILMARK—RANDOM BLOCK—
At Nine Elms, per ft. cube..... 3 11

HOPTON-WOOD STONE—

	s. d.
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P. ft. cb.	14 0
Sawn two sides "	22 6
Sawn three or four sides "	27 0

YORK STONE, BLUE—*Robin Hood Quality.*
Delivered at any Goods Station, London

6 in. sawn two sides landings to sizes (under 80 ft. super) .....Per ft. super	5 6
6 in. rubbed two sides, ditto..... "	6 0
3 in. sawn two sides slabs (random sizes 2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	2 3½
1½ in. to 2 in. ditto, ditto ..... "	3½

HARD YORK—

	s. d.
Delivered at any Goods Station, London. Scappled random blocks .....Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) .....Per ft. super	5 1½
6 in. rubbed two sides, ditto ..... "	6 1½
4 in. sawn two sides slabs (random sizes "	3 1½
3 in. ditto ditto "	2 6
2 in. self-faced random flags .....Per yd. super	5 3

CAST STONE

Delivered in London area in full van loads, per ft. cube: Plain, 6s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEALS.

Inches.	per stan.	Inches.	per stan.
4 × 11	£24 10	5 × 6	£17 0
4 × 9	20 0	3 × 11	19 10
4 × 8	20 0	2 × 11	19 10
4 × 7	18 0	3 × 9	19 10
3 × 8	18 0	2½ × 9	19 10
3 × 7	18 0	3 × 4½	17 10
2½ × 7	18 0	3 × 4	17 10

PLANED BOARDS.

1 × 11	£22 10	1 × 9	£21 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝	16/-	1½	25/-
¾	17/-	1¾	27/6
⅞	20/-		

TONGUED AND GROOVED FLOORING

Inches	per sq.	Inches.	per sq.
1	21/-	¾	15/-
1¼	26/-	⅞	16/6
1½	27/6	1	20/-

Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾ × 2.....per 100 ft.	2 0	Per bundle	2 3

1 INCH AND UP THICK.

Average price for prime quality.

	£ s. d.
Dry Austrian Wainscot, per ft. cube.....	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube.....	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube...	0 10 0
Best Scotch Glue, per cwt. ... £4 10 0 to	—
Liquid Glue, per cwt. ..... 4 7 0 to	5 10 0

SLATES

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	30 0 0	18 by 10	16 10 0
22 by 12	26 10 0	18 by 9	14 12 6
22 by 11	24 10 0	16 by 10	14 5 0
20 by 12	24 0 0	16 by 8	11 0 0
20 by 10	20 2 6		

TILES

Delivered at London rate stations in full truck loads of not less than 6 tons.

	Per 1,000. f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district	£4 10 0
ditto hand-made ditto	5 5 6
Ornament 1 ditto	5 5 6
Hip and valley tiles { Hand-made	0 9 6
per dozen { Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &C., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted	£11 0 0
Plain Compound Girders	12 0 0
" Stanchions	15 0 0
In Roof Work	18 0 0

MILD STEEL ROUNDS.—To London Station, per ton

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	12 0 0	⅝ in. to ¾ in.	10 15 0
⅞ in.	11 0 0	1 in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛ in. to 6 in. %	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ⅛ in. to 6 in. %	Standard Fittings Sizes ⅛ in. to 6 in. %	Standard Flanges Sizes ⅛ in. to 6 in. %
Gas ...	65	52½	57½	70
Water ...	61½	48½	52½	65
Steam ...	57½	45	47½	60
Galv. gas	52½	40	47½	60
Galv. water	47½	35	42½	55
Galv. steam	42½	30	37½	50

C.I. HALF-ROUND GUTTERS—London Prices ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	11d.	1/5	5d.
3½ in.	11½d.	1/7	5d.
4 in.	1/-½	1/9	5d.
4½ in.	1/1½	2/-	6d.
5 in.	1/3	2/2	8d.
O.G. GUTTERS.			
3 in.	1/1	1/11	5d.
3½ in.	1/2	1/11	5d.
4 in.	1/2½	2/-	5d.
4½ in.	1/4	2/4	6d.
5 in.	1/6½	2/8	8d.

RAIN WATER PIP. &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches stock angles.
2 in.	1/3½	1/0	2/7
2½ in.	1/4½	2/-	3/1
3 in.	1/8½	2/6	3/9
3½ in.	2/1½	3/-	4/4
4 in.	2/5	3/7	5/0

Connections—50 per cent. off above prices.
Tonnage allowance—4 ton lots, 5 per cent.
2 ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Works

	Pipe.	Bends, stock angles.	Branches stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts.	1 11	1 6½	1 10½
2½ in. "	2 3½	1 8½	2 4
3 in. "	2 4½	1 10½	2 9½
3½ in. "	2 7	2 4	3 3
4 in. "	2 11	2 7½	3 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works

	Pipe.	Bends, stock angles.	Branches stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	3 4	4 3	5 1
	cwt. qr. lbs.		
4 in. "	1 1 20	4 7	6 3 8 10
5 in. "	1 3 22	6 0	9 0 14 1
6 in. "	2 0 0	6 8	10 11 18 1

Gaskin for jointing 41/- per cwt.

IRON—	Per ton in London. £ s. d.	£ s. d.
Common bars	10 10 0	11 0 0
Staffordshire Crown Bars	10 15 0	11 10 0
Good merchant quality Staffordshire Marked Bars	14 0 0	15 0 0
Mild Steel Bars	9 10 0	10 0 0
Steel Bars, Ferro-Concrete quality, basis price	8 0 0	9 0 0
Hoop iron, basis price	11 0 0	12 0 0
" Galvanised	27 0 0	28 0 0
Soft Steel Sheets, Black— Ordinary sizes, to 20 g.	11 0 0	11 10 0
" " " 24 g.	12 0 0	13 0 0
" " " 26 g.	14 0 0	15 0 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	13 10 0	14 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	14 10 0	15 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	17 10 0	18 10 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets— Ordinary sizes 6 ft. to 9 ft. to 20 g.	13 0 0	14 0 0
Ordinary sizes 6 ft. to 9 ft. to 22 g. and 24 g.	14 10 0	15 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	16 10 0	17 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	18 0 0	19 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	20 0 0	22 0 0
Best Soft Steel Sheets, 26 g.	21 10 0	23 0 0
Cut Nails, 3 in. to 6 in.	15 0 0	16 0 0

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot Super.

COPPER.

	s. d.
Seamless Copper tubes (basis) ..... per lb.	0 9½
Strong sheet..... "	0 10
Thin ..... "	0 11
Copper nails..... "	1 0
Copper wire ..... "	0 11

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	93/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.
1 lbs. P. traps ...	33/-	41/-	56/-	101/- per doz.
2 lbs. S. traps ...	25/-	45/-	66/-	126/- "

TIN.—English Ingots, 1/7 per lb. SOLDER.—Plumber's 9d., Tinmen's 10d., Blowpipe 11d. per lb.

*The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(*cont.*)

LEAD, &c.

(Delivered in London.)	£	s.	d.
LEAD—Sheet, English, 4 lb. and up	22	10	0
Pipe in coils	23	0	0
Soil pipe	26	0	0
Compo pipe	26	10	0

NOTE.—Country delivery, 20s. per ton extra; lots under 2 cwt. 3s. per cwt. extra, and over 2 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes 6s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton £12 10 0

PAINTS, &c.

		£	s.	d.
Raw Linseed Oil, in pipes	per gallon ...	0	1	11
" " " in barrels ...	" ...	0	2	1
" " " in drums ...	" ...	0	2	4
Boiled " " in barrels ...	" ...	0	2	5
" " " in drums ...	" ...	0	2	7
Turpentine in barrels	" ...	0	4	10
" in drums (10 galls.)	" ...	0	5	0
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)		47	10	0

Extra for 1-cwt. kegs over 5-cwt. casks is 5/0 cwt.

GENUINE WHITE LEAD PAINT.

"Father Thames." "Nine Elms."
"Park." "Supremus." "St. Paul's."
"Morganwyte." "Polseco." "J"
Brand, and other best brands (in 14-lb. tins) not less than 5 cwt. lots. £ s. d.
per ton delivered ... 64 10 0

Red Lead, Dry (packages extra) ...	per ton	34	0 0
Best Linseed Oil Putty	per cwt.	0	13 6
Size. XD quality	fkn.	0	3 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

Per ft.		Per ft.	
15 oz. fourths ...	2½d.	22 oz. fourths	7½d.
15 " thirds ...	3½d.	22 " thirds.....	9½d.
21 " fourths ...	3½d.	Obscured Sheet, 15 oz. ...	3½d.
21 " thirds ...	4½d.	" " 21 oz. ...	4½d.
26 " fourths ...	4½d.	Fluted, 15 oz. 7d., 21 oz....	9½d.
26 " thirds ...	7½d.	Em'bed, 15 oz. 4½d., 21 oz.	6d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
¼ Rolled plate	4½d.
¾ Rough rolled	5½d.
Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	6d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

"VITA" GLASS.	Per foot. s.	d.
Clear sheet—not exceeding 1 foot	1	0
Do. do. 2 feet.....	1	3
Do. over 2 feet	1	9
Polished plate—not exceeding 1 foot	1	6
Do. not exceeding 2 feet.....	3	0
Cathedral—not exceeding 1 foot	1	0
Do. larger sizes	1	6
Horticultural—for greenhouses, etc. Sizes up to 24 inches by 16 inches or not exceeding 3 feet	1	0
3/16 in. Wired Georgian Design. Sizes up to 108 inches long by up to 24 inches wide.....	2	6

VARNISHES, &c.

		Per Gallon. £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal.....	ditto	0	18	0
Pale Copal.....	ditto	1	0	0
Pale Opal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	0
Fine Cop. Fitting.....	ditto	1	0	0
Hard Drying Oak	ditto	0	18	6
Fine Hard Drying Oak	ditto	0	19	6
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	12	6
Best ditto	ditto	1	2	6
Best Japan Gold Size.....		0	13	0
Best Black Japan		0	10	0
Oak and Mahogany Stain (water).....		0	12	6
Brunswick Black		0	7	0
Berlin Black		0	14	0
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebene		0	9	0
Culrass Black Enamel		0	7	0

"New Shoe Factory, Tilbury."

The Bata Shoe Company (British), Ltd., of Sentinel House, Southampton-row, W.C.1, write us, with reference to the information printed in our issue of March 4, that contracts for new buildings for their proposed new factory on the site at East Tilbury had been placed with two constructional engineering firms, that "no contracts whatsoever have been definitely placed with either of the above firms or any other firms who have approached us."

TRADE NEWS

Shopfittings.

A list (No. 1318) of shopfittings suitable for the spring trade has been issued by Messrs. Dudley and Co., Ltd. It contains full descriptions and illustrations of the many articles requisite for modern practice. A copy can be obtained from 451, Holloway-road, N.7, upon mentioning this paper.

A.R.P. Studios, Ealing.

The article in our issue of February 26 did not mention that Messrs. Smith and Hammond, Ltd., Buckingham House, Buckingham-street, W.C.2, carried out the very complex electrical installation, also wiring for the organ, under the direction of the architects, Messrs. Robert Atkinson.

English Doors.

Messrs. Sharp Bros. & Knight, Ltd., issue from Burton-on-Trent their latest list of "Enjo" doors. These are British-made and guaranteed by the English Joinery Manufacturers' Association. Many well made and designed examples of kiln-dried red deal doors are shown, both for internal and external use.

A New Tracing Pencil.

The claims made for the Mars "Lumograph" pencil are that in tracing drawings of which blue prints are required it can take the place of the ink-filled drawing pen, also that the lines are unsmearable. Where rapidity is required it should have its uses, as it has now been tested and found highly satisfactory, even for small-scale drawings. It is marketed by Messrs. J. S. Staedtler, Ltd., 13, Lamb's Conduit-street, W.C.1.

Synchronised Electric Clocks.

At the recent British Industries Fair, H.M. the Queen and other members of the Royal Family were graciously pleased to visit the stand of Messrs. Smith's English Clocks, Ltd. The Royal party evinced great interest in the new synchronous electric clocks, Her Majesty, in particular, displaying considerable knowledge of their functioning and inquiring as to where they were obtainable. Among the models displayed there was the Smith's synchronous alarm clock, which marks no mean achievement in British clock manufacture, this being the first of its type to be produced in England on mass lines and selling at a moderate price.

Absorption of Lift Firm.

Since 1925 Medway's Safety Lift Co., Ltd., has been controlled by J. & E. Hall, Ltd., of Dartford, Kent, and the design and manufacture of their lifts has been carried out at J. & E. Hall's Works. In December last the assets and outstanding contracts of the Medway Company were taken over by J. & E. Hall, Ltd., who are continuing the business as a department of their organisation, with the whole of the personnel formerly employed by the Lift Company. The change really involves no more than a limited amount of internal reorganisation, the effect of which should be to benefit present and future users of these lifts by increasing resources and promoting general efficiency. It is to be noted that, in addition to lifts of all types, J. & E. Hall, Ltd., are now manufacturing escalators to the design of the Carl Flohr Company, of Berlin. Five of these have recently been installed at Messrs. Bentall's new store at Kingston-on-Thames, and another escalator order has been received from Messrs. Hammonds, of Hull.

A Contra-Flow Washer.

The Parker Contra-Flow Washer, which we recently had the opportunity of inspecting, emphasises the progress which has been made in recent years in the development of washers and gravel-handling plant generally. In this development, Messrs. Fredk. Parker, Ltd., of Leicester, state that the secret of this success appears to lie chiefly in the perfecting of the contra-flow principle, whereby a contra-flow of water against the feed of material is secured instead of following the usual practice of both water and material flowing in the same direction. The contra-flow principle will be well known to most of our readers, and it is now claimed that the early disadvantages associated with contra-flow washers have been overcome in the Parker machine. A demonstration washer is, we are told, kept at the Parker works, where demonstrations with bulk samples are carried out. Our readers who are considering putting in new plant will appreciate this offer of a preliminary test on their own material.

The Hoover Factory, Perivale.

In connection with our illustrations of this factory in our issue of February 26, we should have stated that Messrs. A. Goldstein & Co., 100, Westminster Bridge-road, S.E.1, supplied glass and carried out glazing on this building, under the direction of the architects, Messrs. Wallis, Gilbert & Partners.

NEW BUILDINGS IN SCOTLAND

Aberdeen.—HOUSING.—The T.C. has approved a housing scheme at Mansfield-road, Torry, the tenders for which amount to over £85,000.

Airdrie.—EXTENSIONS.—The T.C. has decided to extend the municipal offices, at £2,300. Messrs. G. Arthur & Sons, architects, submitted plans.

Roxburgh.—HOUSING.—The C.C. Public Health Committee have recommended acceptance of offers amounting to £3,348 in respect of houses to be built at St. Boswells.

Wishaw.—BUILDING.—The Motherwell and Wishaw Dean of Guild Court has approved the following:—Thos. Baird & Co., drapers, Kirk-road, Wishaw—extension to premises, at £2,000; Cowie & Millar, architects, Wishaw—four-apartment cottage at Mossneuk-park, Wishaw, at £650; Wm. R. Lindsay, 2, Calder-street, Motherwell, and John Lang, Newlands, Glasgow—four-apartment cottage at Kether-street, Motherwell; each of the cottages to cost £600.

BUILDING TRADE WAGES IN SCOTLAND*

Following are grade rates authorised by the Scottish N.J.C. for Building Industry. The bricklayers in the Glasgow district have ½d. per hour extra. It should be noted that plasterers and painters who are not parties to the Scottish N.J.C. pay higher wages of 1d. and ½d. per hour extra respectively. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classifications ...	A	A¹	A²	B	B¹	B²	B³
Craftsmen	1/6½	1/6	1/5½	1/5	1/4½	1/4	1/3½	1/3
Labourers	1/2	1/1½	1/1½	1/0½	1/0½	1/-	/11½	/11½

Aberdeen	A	Dundee	A	Hawick	A²	Perth	A
Airdrie	A	Dunfermline	A	Helensburgh	A	Perthshire	A²
Alexandria	A	Dunoon	A	Inverness	B	Peterhead	A²
Arbroath	A²	East Lothian	A	Kilmarnock	A	Renfrewshire	A
Ayrshire	A	Edinburgh	A	Kincardineshire	A²	Rothesay	A
Bathgate	A	Falkirk	A	Kinross-shire	A	Roxburghshire	A²
Bo'ness	A	Forfarshire	A²	Kirkcaldy	A	St. Andrews	A
Brought Ferry	A	Fort William	A	Lanarkshire	A	Selkirkshire	A²
Clackmannanshire	A	Galashiels	A²	Leith	A	Stirling	A
Coatbridge	A	Glasgow	A	Midlothian	A	Stirlingshire, West	A²
Dumbartonshire	A	Greenock	A	Motherwell	A	West Lothian	A
Dumfries	A²	Hamilton	A	Peebleshire	A²	Wishaw	A
Dumfriesshire	A²						

* The information given in this table is copyright. The rates of wages in various towns in England and Wales are given on page 534.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	9	9
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	4
Do. to sides of excavation, including shoring	,,	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	27	0
Add if in underpinning in short lengths	,, ,,	6	0
Add if in floors 6 in. thick	,, ,,	2	6
Add if in beams	,, ,,	3	0
Add if aggregate 1 : 2 : 4	,, ,,	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,,	2	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	,,	7	10	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	5	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork:—			
Fair external in half brick rings	0	0	10
Axed in stocks	0	0	9
Rubbed and gauged jointed in putty camber or segmental	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement		0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks		4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarte -inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,,	1	0

MASON.

York stone templates fixed	per foot cube	13	0
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	20	0
Chilmark stone fixed complete	,, ,,	17	6

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	4	3
Do. joists	,, ,,	4	9
Do. roofs, floors and partitions	,, ,,	5	3
Do. trusses	,,	7	9

		1"	1"	1½"	2"
Deal rough close boarding	per sq.	33/6	38/-	43/-	70/-
Flat centering for concrete floor, including struts or hangers	,,				80 0
Do. to beams	per ft. sup.				0 9
Centre for arches	,,				1 6
Gutter boards and bearers	,,				1 0

FLOORING.

		½"	1"	1½"	1½"
Deal-edges shot	per sq.	—	42/6	50/-	57/6
Do. tongued and grooved	,,	—	47/-	56/-	64/-
Do. matchings	,,	44/-	49/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/-	2/6

SASHES AND FRAMES

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights: average size	,,	3	9

DOORS

		1½"	1½"	2"
Two-panel square framed	per ft. sup.	2/1	2/3	2/5
Four-panel Do.	,,	2/4	2/6	2/9
Two-panel moulded both sides	,,	2/6	2/9	2/11
Four-panel Do. Do.	,,	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		1"	1½"	1½"
Deal wrot moulded and rebated	per foot cube	14		
Plain deal jamb linings framed	per ft. sup.	1/1	1/3	1/11
Deal shelves and bearers	,,	1/4	1/6	1/9
Add if cross-tongued		2d.	2d.	2d.

STAIRCASES.

	1"	1½"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail average, 3 in. × 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/6	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	3
Plain compound girders	,,	18	0
Do. stanchions	,,	20	9
In roofwork	,,	28	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/4	1/7	1/9	2/-
Ogee Do. Do.	,,	1/6	1/9	2/3	2/9
Rain-water pipes with ears	,,	1/6	2/4	—	—
Extra for shoes and bends	each	3/4	4/11	—	—
Do. stopped ends	,,	1/6	1/10	2/9	3/3
Do. nozzles for inlets	,,	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	40	0
Do. Do. in flats	,,	30	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	3

	½"	¾"	1"	1½"	2"	4"
Drawn lead waste per ft. run	1/1	1/7	1/10	3/-	3/6	—
Do. service ,,	1/6	2/-	2/5	3/6	—	—
Do. soil ,,	—	—	—	—	—	6/-
Bends in lead pipe each	—	—	—	—	3/-	6/6
Soldered stop ends ,,	1/-	1/4	1/9	2/6	3/2	—
Red lead joints ,,	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints ,,	2/6	3/-	3/6	4/4	5/6	7/6
Lead traps and cleaning screws ,,	—	—	—	12/7	17/6	—
Bib cocks and joints ,,	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints ,,	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	3
Do. Do. Sirapite	,, ,,	2	6
Do. Do. Keen's	,, ,,	3	6
Add saw lathing	,,	1	7
Add metal lathing	,,	2	6
(Not including hangers or runners, etc. for suspended ceilings.)			
Portland cement screed	,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	3

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	7½
26-oz. Do.	,, ,,	0	10
Obscured sheet	,, ,,	1	1
¼-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10
¼-in. wired cast plate	,, ,,	1	3

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

*These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of £ ½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 4d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

THE EASTER HOLIDAYS.

Owing to the Easter Holidays, "The Builder" for next week will be published on Thursday, March 24. Copy for publication in that issue should reach this office by first post Tuesday morning.

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.
¶ Denotes *accepted by H.M. Office of Works and H.M. War Office*.

Aberdeen.—172 three-apartment dwellings and 86 two-apartment dwellings in Mansefield-road, Torry, for the T.C.:—

Granite, etc.—
*W. Beaton & Son £37,454 14 11
Plumber, etc.—
*A. McRob 8,953 8 6
Plasterer, etc.—
*J. Goodfellow & Co. 12,200 16 8
Slater, etc.—
*C. Stewart & Son 3,810 10 8½
Painter—
*R. Milne 2,736 17 3½
Electric light—
*Bell & Robertson, Ltd. 1,447 3 10
Railings and gates—
*G. Bisset & Son 869 3 8

Barnes.—External renovations, including certain repointing work, and internal redecorations, at 14-20, Merthyr-terrace, for the M.W.B.:—

E. C. Samso & Co. £143 0 0
H. S. Moss 115 11 6
W. Chapman & Sons 107 0 0
Collins & Co. 106 0 0
F. W. Streeton 103 0 0
*C. H. King 90 15 6

Barnsley.—Installation of heating and ventilating systems in the new Municipal Buildings in course of erection for the T.C. Messrs. Briggs & Thornely, F.R.I.B.A., architects, Royal Liver-buildings, Pier Head, Liverpool:—

*Saunders & Taylor, Ltd., Manchester.

Birmingham.—Pavilion for Handsworth junior day technical school, playing field, Handsworth Wood, for the E.C.:—

*Harrison Smith Buildings, Ltd., Birmingham £239 10

Blackburn.—Alterations to Limbrick Mill for Messrs. W. Tattersall & Sons, Ltd., King William-street and Market-place:—

*W. Livesey & Sons, Blackburn.

Blackpool.—Reconstruction of premises at the corner of Church-street, for Messrs. D. T. Jones. Mr. H. F. Keighley, L.R.I.B.A., architect, 113, Toppington-street:—

Builders—*Newton Park Estate, Ltd., Blackpool.
Joiners—*Potts & Pickford, Blackpool.
Steelwork—*Thos. Blackburn & Sons, Ltd., Preston.

Bolton.—Extensions and alterations in Hotel-street, for Messrs. Naisby & Co. Messrs. W. & S. Bradley, LL.R.I.B.A., architects, 8, Acresfield:—

*R. Porter, Bolton.

Boston.—Reconstruction of saw mill in Pulvertoft-lane, for Messrs. R. S. Trenery & Sons (Boston), Ltd., timber importers, High-street:—

*Handley & Co., Boston.

Bradfield.—6 cottages at Mortimer, for the R.D.C.:—

H. D. Higgs & Son, Burghfield Common £1,714 15
‡Francis, Tilehurst 1,905 0

Bradford.—Plumber's and glazier's work in connection with the Central Area buildings, for the T.C. Mr. W. Williamson, F.R.I.B.A., City Architect:—

*T. Hill & Sons, 82, Manningham-lane, Bradford £12,900

Burnley.—Alterations and additions to paper works, Calder Vale-road, for the Burnley Paper Works Co., Ltd. Mr. R. Dean, architect:—

*M. & J. W. Heap, Ltd., Burnley.

Chepping Wycombe.—Sub-contracts, for the new public library, museum and art gallery, for the T.C.:—

Block flooring—
*Stevens & Adams £473 0
Fittings—
*G. H. Gibson & Sons 954 0
Electrical work—
*Wycombe (Borough) Electric Light & Power Co., Ltd. 158 15

Coventry.—Swimming-bath and dressing-rooms at Coventry Preparation School, Kenilworth-road, for Rev. K. Swallow. Mr. H. T. Jackson, A.R.I.B.A., architect:—

*R. Harris & Son, Coventry.

Desborough.—Extensions to factory in Loatland-street, for Messrs. Foster Bros.:—

*Tailby & Son, Desborough.

Dover.—30 houses on the Buckland housing site, for the Corporation. Mr. W. Boulton Smith, Borough Engineer, Maison Dieu House, Dover. Quantities by the Borough Engineer:—

Houses—
*G. Lewis & Sons (Dover), Ltd., Widred-road, Dover £11,070 0
Excavation—
*G. Lewis & Sons (Dover), Ltd., Widred-road, Dover 1,639 10

Droitwich.—Premises for the Droitwich Development Corporation, Ltd., and Hesketh Park (Southport) Land and Development Co., Ltd., The Brine Baths, Droitwich Spa. Messrs. Thos. H. Mawson & Son, FF.R.I.B.A., architects, High-street House, Lancaster:—

*J. Long & Sons, Ltd., Bath.
(Estimated cost: £21,000.)

Dundee.—New administrative offices, garage and other works, for cleansing department. Mr. David MacLay, architect:—

Excavation, brick and mason—
*D. Bowman & Co., 119, Rosebank-street, Dundee £2,043
Steel structural—
*Fleming Bros., 65, Bath-street, Glasgow 538
Joinery, carpentry and ironmongery—
*J. L. Bruce, 12, Queen-street, Dundee 449
Glazier—
*Donald & Smith, 33, Kincardine-street, Dundee 127
Slater and roughcast—
*J. Hosie, 19, Urquhart-street, Dundee 270
Plumber—
*J. Robertson & Son, 196, Princes-street, Dundee 642
Plaster—
*Wm. Brand & Son, 196, St. Vincent-street, Broughty Ferry 1,146

Ealing.—Painting and redecorating of the Vestry Hall, for the T.C.:—

Brown & Middleton £265 0
G. Holland & Son 166 0
H. Kerswell 165 0
Myring & Son 159 15
F. Hutchings 156 12
T. Millman, Ltd. 156 0
Walter J. Dickens 138 10
H. Talbot 136 15
*F. Coyle & Co., Ltd. 124 10

Ealing.—12 shops and flats at Windmill-road, for Mr. Wigglesworth:—

*F. Richards, Ltd., London-lane, Hackney.

Ealing.—Factory at Bideford-avenue, for Wego Condenser Co., Ltd.:—

*Percy Bilton (Inc.), Ltd., 113, Park-street, W.1.

Ealing.—Reconstruction of premises of Messrs. Sayers & Sons, The Broadway:—

Builders—*Kerswill, 38a, High-street. Ealing, W.5.
Shopfitters—*Pollard & Co.

Frinton-on-Sea.—Additions and alterations to residence, for Mr. C. F. Bland. Messrs. Tomkins, Homer & Ley, architects:—

*W. Green & Sons, Frinton-on-Sea.

Frinton-on-Sea.—Residence, for Sir Albert Stern, K.B.E., C.M.G. Messrs. Tomkins, Homer & Ley, architects:—

*C. H. Jones, Ltd., Frinton-on-Sea.

Frinton-on-Sea.—Alterations and additions to residence, for Mr. T. L. May. Messrs. Tomkins, Homer & Ley, architects:—

*C. H. Jones, Ltd., Frinton-on-Sea.

Frinton-on-Sea.—Residence, for Mr. M. Baker. Messrs. Tomkins, Homer & Ley, architects:—

*W. Green & Sons, Frinton-on-Sea.

Frinton-on-Sea.—Alterations and additions to studio, for Messrs. "Annette." Messrs. Tomkins, Homer & Ley, architects:—

*Messrs. C. H. Jones, Ltd., Frinton-on-Sea.

Glasgow.—Construction of the Lennox Castle Institution, for the T.C.:—

Excavator, mason, brick, and asphalt works—
‡John Train & Co., Ltd. £135,942
Steelwork—
‡Redpath, Brown & Co. 8,219
Reinforced concrete work—
‡Wm. Taylor & Son (Glasgow), Ltd. 29,946
Carpenter and joiner works—
‡Wylie & Lochhead, Ltd. 59,875
Steel windows—
‡Henry Hope & Sons, Ltd. 16,082
Smith work—
‡Alexander Peters, Ltd. 4,416
Plumber work—
‡Hugh Tweddle & Son, Ltd. 26,140
Slater work—
‡P. White & Co., Ltd. 22,641
Plaster work—
‡Robert Jolly & Sons 18,729
Roughcast and external plaster work—
‡P. White & Co., Ltd. 2,674
Tile, terrazzo and marble works—
‡Toffolo, Jackson & Co. 21,286

Glasgow.—Masonry, etc., work at Craigton-road bridge, for the T.C. Mr. Thomas Somers, Master of Works Department:—

*Gebbie & Co., Ltd., 53, Waterloo-street, Glasgow £734 13

Goole.—12 houses at Swinefleet, for the R.D.C. The Architect, 6, Belgravia:—

*Platt & Featherston, Goole.

Guildford.—Two shops in Aldershot-road, for Mr. C. F. Coombes. Mr. H. Yolland Boreham, F.R.I.B.A., architect, 1, Museum-street, London, W.C.1:—

T. Swayne & Son, Ltd. £2,274
Iribe & Robinson, Ltd 2,182
W. Bullen & Sons, Ltd. 2,177
*W. G. Sheppard 1,972

Hollinwood.—Church of Corpus Christi in Old lane, Hollinwood, near Oldham, for Rev. W. B. Guinan, P.P. Mr. H. A. Yearsley, L.R.I.B.A. architect, Imperial-buildings, Oxford-road, Manchester:—

*Moston Brick & Building Co., Ltd., Manchester.

Hollingworth.—Additions to outfall works, consisting of alterations to existing tanks, construction of new detritus tanks, bacteria beds, humus tanks and incidental works therein, for the U.D.C. Messrs. Brady & Partington, engineers, Chapel-en-le-Frith:—

*Z. & W. Wade, Halifax £6,478

Horsham.—12 non-parlour cottages and extension of sewer, at West-street, Billinghurst, for the R.D.C. Mr. V. Bartrim, Building Surveyor, 42, Albion-terrace:—

*W. H. Green & Son, Trafalgar-road, Portslade (per pair) £590

Hull.—New Church of St. Vincent in Church-road, for the Catholic Authorities. Messrs. Williams & Jopling, A.R.I.B.A., architects, Ferres-chambers, Whitefriargate:—

*Quibell & Sons, Ltd., Hull.
(Estimated cost £8,600.)

Jarrow-on-Tyne.—Bakery and confectionery premises in Bede Burn-road, Mr. G. C. Young, architect, Grange-road West:—

*J. Barrow, Northbourne-road, Jarrow.

Kettering.—Alterations and additions to Rutland Mills in Rutland-street and Lancaster-road, for Kettering Corset Manufacturing Co., Ltd.:—

*Co-operative Building Society, Ltd., Kettering £2,800

Kidderminster.—Additions to works in Worcester-street, for the proprietors of the "Kidderminster Shuttle," Corporation-street. Messrs. Godwin & Clist, F. & A.R.I.B.A., architects, Bank-buildings:—

*T. Vale & Son, Ltd., Stourport.

Kilmarnock.—Reconstruction and extension of electrical station, for Central Electricity Board. Messrs. Kennedy & Donkin, architects and engineers, 276, St. Vincent-street, Glasgow:—

*T. Y. Jamieson, Oakley, Muirhead-road, Ballieston.

Knutsford.—Six houses in Old Market-place, for the U.D.C. Mr. G. R. Butler, surveyor:—

†Thomason & Co., Lymm.

Leeds.—Rebuilding of the "Cricketers' Arms," Dewsbury-road, for Messrs. Ind, Coope & Co., Ltd., Burton, Brewers. Messrs. A. & F. Mosleys, Ltd., architects, Wormald-row:—

*W. T. Pearson, Ltd.

Leeds.—Reconstruction of shop premises in Commercial-street, for Messrs. Brill:—

*Wm. Mason & Sons, Ltd.

Leeds.—Internal reconstruction of shop premises in Park-lane, for Messrs. Richardson:—

*Wm. Irwin & Co., Ltd.

Leeds.—Houses in Cross Flatts-street and Cross Flatts-road:—

*S. Shute.

Little Hutton.—12 semi-parlour and 24 non-parlour houses, on Alexandra-road scheme, for the U.D.C. Mr. James T. Davies, surveyor:—

*J. Gerrard & Sons, Ltd., Swinton.

¶**London.**—The following works contracts have been placed by the War Office during the week ended March 10:—

Beverley—improvements to married soldiers' quarters—A. Roberts, Beverley.
Catterick—erection of gymnasium—F. Perks & Son, Ltd., Long Eaton.
Halifax—erection of bath-house—E. Oxley & Son, Sheffield.
Scarborough—improvements to married soldiers' quarters—Jaram & Co., Scarborough
York—erection of bath-house—J. W. Maw & Son, York.

¶**London.**—Tenders accepted by H.M.O.W. for the week ending March 12:—

Teddington Laboratory—heating—Thames Bank Iron Co., Ltd., Lodge-road, N.W.8.
Belfast, Parliament Buildings—marble, etc.—J. Whitehead & Sons, Ltd., Kennington Oval, S.E.
Sheffield, Ministry of Health—alterations—Abbott & Bannister, Ltd., 132, Machon-bank, Sheffield.
Birmingham, Post Office Stores—painting—J. E. Harper & Son, Ltd., 72, Lombard-street, Birmingham.
Stourbridge, Post Office—alterations and additions—J. Harper & Sons (Blackheath), Ltd., Blackheath, Birmingham.

†London.—Tenders accepted by H.M. Air Ministry for the week ended March 5:—

Farnborough—drainage, levelling and turfing—H. J. Goodall & Son, Ltd., Queens-road, Basingstoke.

Lympne and Singapore—wireless towers—Joseph Parks & Son, Wadebrook Steelworks, Northwich.

London.—Cleansing, painting and repairs and minor works at Westminster institution, for the L.C.C.:—

Jesse Mead, Ltd., Chesham	£2,720
Arthur E. Peacock	2,531
Stoneley & Co.	1,952
Boyce & Co.	1,875
A. J. & C. Hocking	1,870
Carter & Wise, Ltd.	1,832
F. S. Lee, Enfield	1,810
Decra, Ltd.	1,783
J. Hocking & Co.	1,727
Harry Meckhonik	1,596
S. T. Wright	1,586
W. S. Lambeth	1,550
Buckingham & Sons	1,543
Edward Proctor & Sons	1,494
George Jones & Son	1,485
Sykes & Son, Ltd.	1,437
Falkus Brothers, Ltd.	1,424
W. J. Marston & Son	1,398
W. Chappell & Co., Ltd.	1,375
F. C. Gower	1,360
E. Christian & A. Sinclair	1,338
N. W. Decor, Ltd.	1,319
F. Troy & Co., Ltd.	1,269
Charles Berger	1,259
*Headstone Construction Co., Ltd., 87, High-road, Kilburn, N.W.6 (Chief Engineer's estimate: £1,550.) (Remainder of London.)	1,240

London.—Engineering general works and repairs for a period of two years, for the L.C.C.:—

*Holland & Hannen and Cubitts, Ltd.

London.—Certain drainage repair works at 37-67, Ellerdale-street, for the Lewisham B.C.:—

Why & Clayton	£412 6 3
A. T. Peyton	166 0 0
A. J. Glock, Ltd.	159 10 0
*G. J. Stevenson	149 10 0

London.—External painting, etc., at Halton Mansions, N.1 (160 flats), for the Islington B.C.:—

J. Nash & Sons	£1,413 17 9
Wm. Carter & Sons, Ltd., Sunderland	1,215 0 0
J. Winget (G. W. Eyres, proprietor)	1,170 0 0
A. E. Brown	1,095 10 0
Ebenezer King (Builders), Ltd.	1,080 0 0
W. Bolt & Son, Ltd.	1,036 10 0
S. C. Grover, Ilford, Essex	879 0 0
B. A'flatt & Sons	875 0 0
Thurgoods (London), Ltd.	820 0 0
Stevens & Sons	791 0 0
Buckingham & Sons	763 0 0
Pitts, Ltd.	720 0 0
R. Woolaston & Co.	695 0 0
Chas. Berger	679 0 0
Thomas Cole (Barnsbury), Ltd.	649 0 0
J. Johnson	625 0 0
R. Cherry & Co., Ltd.	533 9 0
C. & T. Painters, Ltd.	523 0 0
†F. Troy & Co., Ltd. (Remainder of London.)	480 0 0

London.—Reconstruction of the Green Park convenience, for the Westminster City Council. The City Engineer:—

John Knox & Dyke, Ltd.	£4,950 0
Holliday & Greenwood, Ltd.	4,936 0
Balfour Beatty & Co., Ltd.	4,777 0
Knight, Henry, & Son	4,664 0
Griggs & Son, Ltd.	4,420 0
Army & Navy Co-operative Society, Ltd.	4,417 16
Sims & Russell	4,216 0
*B. Finch & Co., Ltd.	4,087 0

London.—Shopfront at 11 and 13, Ebury Bridge-road, for the Westminster City Council:—

Fredk. Sage & Co., Ltd.	£212 5 0
E. Pollard & Co., Ltd.	203 10 0
*A. Davies & Co. (Shopfitters), Ltd.	176 7 6

Malpas.—For (*a*) 12 houses at Malpas, and (*b*) 2 houses at Norbury, for the Council. Mr. C. C. Bradley, surveyor:—

(*a*)*Wright Bros., Huxley, Chester.
(*b*)*F. King, Wrenbury, Nantwich.

Manchester.—Church and Sunday school at the junction of Platt-lane and Hart-road, Withington, for the Trustees of the Wilbraham Estate Wesleyan Methodist Church and the Rev. H. Cooper, Wesleyan Central Hall, Oldham-street. Messrs. Arthur Brocklehurst & Co., F.R.I.B.A., architects, Martin's Bank-buildings, 10, Norfolk-street:—

*Normanton's, Ltd., Manchester.

Market Bosworth.—Laying of about 1,000 yds. of stoneware pipe sewer, 6 in. to 12 in. dia., and construction of sewage outfall works, in parish of Markfield, for the R.D.C. Messrs. Pick, Everard, Keay & Gimson, engineers, 6, Millstone-lane, Leicester:—

*Ward & Telley, Bradford ..... £2,825.

Marley Hill (Durham).—New club and institute. Mr. S. J. Stephenson, architect, 2, Saville-place, Newcastle:—

*Shield Bros., Back Park-terrace, Swalwell, Durham.

Middlesbrough.—212 houses, for the T.C.:—

12 Homes for aged people on the Whinney Banks estate—
*J. McCreton, Ltd ..... each £182

100 A3 type houses on Whinney Banks—
*J. McCreton, Ltd ..... each £299

100 A3 type houses on Brambles Farm estate—
*J. McCreton, Ltd. ..... each £299

Moseley.—Elementary school for 270 children at Seel Fold, for the Catholic authorities, for the Rev. W. Dorran, P.P. Messrs. Byrom & Noble, A.A.R.I.B.A., architects, 9, Victoria-buildings, Silver-street, Bury:—

*E. Taylor & Co., Ltd., Littleborough. (Estimated cost: £6,000.)

Newcastle-on-Tyne.—97 bungalows and a caretaker's house, for the T.C. Mr. R. E. Roberts, housing architect, 18, Clothmarket:—

*A. Anderson, Newcastle £22,816

Newport (I. of W.).—Pair of non-parlour houses at the Barton-road housing site, for the T.C. Mr. E. A. Slater, Borough Surveyor, 38, Quay-street:—

*J. G. Brooker, York-avenue, East Cowes (Isle of Wight) £692

Nottinghamshire.—For (*a*) demolition and re-erection of walling, etc., at Black's factory, Beeston; (*b*) demolition and re-erection of buildings at Hawk's Nest; (*c*) demolition and rebuilding of wall on Messrs. Hardy's land at Nuthall, for the C.C.:—

(*a*)*G. W. Brough & Son, Ltd., Beeston £229
(*b*)*G. H. Brett & Sons, East Markham 201
(*c*)*E. Shipstone, Wollaton 133

Oakham.—Electric lighting installation at the British Legion Headquarters. Mr. E. W. Orrey, 40, High-street, Oakham:—

*Oakham Gas & Electric Lighting Co., *Ltd.*

Oxford.—Repaint Avenue No. 4 in the Meat Market, for the T.C.:—

*Billings & Co. £130

Oxford.—Proposed refreshment room at the New Cattle Market, at the ox pens, for the T.C.—

*Hinkins & Frewin £283

Polmaisie.—Pithead bath. Mr. Foshaw, architect, Miners' Welfare Department, London, S.W.1:—

*T. Y. Jamieson, Oakley, Muirhead-road, Ballieston.

Portsmouth.—Refreshment chalet, clubhouse, club hanger, at Municipal Aerodrome for the T.C. Mr. J. Jenkins, City Engineer:—

Steel-framed service hangar—
*Braithwaite & Co. Ltd., Broadway-buildings, S.W.1 ..... £4,207 10 1

Refreshment chalet and offices—
*F. H. Jordan, Ltd., Rivers-street, Portsmouth 2,583 0 0

Clubhouse—
*F. H. Jordan, Ltd., Rivers-street, Portsmouth 1,883 0 0

Club hangar—
*W. J. Cearns, Carpenters-road, Stratford, E.15 ..... 805 0 0

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CROWN WORKS, ST. JAMES'S ROAD, BERMONDSEY, LONDON, S.E.16.
TELEPHONE BERMONDSEY 1294.

Ramsgate.—22 houses at Ratcliffe-square, for the T.C.:—

John B. Shdrman, Ltd.	£12,166 0 0
G. J. Attwood & Co.	11,372 0 0
D. A. Mynheer	10,863 0 0
Ernest W. Martin	10,643 18 9
Grummant Bros.	10,253 0 0
W. W. Martin	9,918 0 0
Arthur Larkin & Co.	8,566 0 0
†Horace Newby, Ltd.	8,020 18 0

Ryde (I. of W.).—Public sanitary conveniences in the north-east corner of the site of the former Royal Pier Hotel Gardens, for the T.C. Mr. T. J. Fawdry, Town Clerk:—

E. Chandler, Ryde	£2,877 15 8
*E. H. Sadler, Southsea	2,158 2 7

Scarborough.—Shelter at North Bay-gardens, for the T.C. Mr. H. W. Smith, Borough Engineer:—

*A. W. Sinclair & Sons, Ltd., Scarborough £825

Shipley.—Construction in ferro-concrete of a bridge and retaining wall in connection with the proposed new road from Crag-road to St. John-street, for the U.D.C. Mr. H. Dawson, engineer and surveyor:—

*Yorkshire Hennebique Contracting Co., Ltd., Leeds.

Short Heath.—34 houses, and laying the necessary roads and sewers, on the Coltham-road estate, for the U.D.C.:—

*J. & F. Wootton, Bloxwich £10,630

Skegness.—Public conveniences at the north end of waterway, North Parade, for the U.D.C. Mr. R. H. Jenkins, surveyor:—

*J. Porter & Son, Skegness £634

Skipton.—Hydraulic ram house, culvert, feed well, etc., for the R.D.C. Mr. A. Rodwell, engineer and surveyor, 16, Gargrave-road:—

*W. Cowgill, Earby.

Stevenage.—Barns in Longcroft-road, for the U.D.C.:—

W. F. Rand, Ashwell	£785 0 0
R. H. Field, Stevenage	723 10 0
A. W. Dymoke, Stevenage	662 19 6
*G. F. Armitage, Letchworth	580 0 0

Stockton-on-Tees.—Pavilion at Grange-park, for the T.C.:—

*W. Marsh £648

Stockton-on-Tees.—20 houses in Raleigh-road, for the T.C.:—

*G. Fordy, Durham-road, Stockton ... £6,185

Stourbridge.—Removal of the wall and iron palisadings fronting St. Thomas's Church, and the re-erection of the wall, etc., for the T.C.:—

*A. M. Griffithe & Sons, Wolverhampton.

Stourbridge.—Shopping arcade and lock-up shops at High-street, for Mr. D. Poole. Mr. Stanley A. Griffiths, architect, 87, High-street:—

*A. Simmonds, Stourbridge.

Stretford.—Certain works of repair in connection with the River Mersey, for the Rivers Mersey & Irwell Catchment Board. Mr. R. W. Eaton, Central-buildings, North John-street, Liverpool:—

*H. Fairclough, Howley, Warrington.

Swansea.—Rebuilding of five blocks of stalls in Avenue "A" of the Market, for the C.B.:—

*H. Billings & Son £182 11 5

Taunton.—Works for the T.C.:—

Priory Council School—
*Stansell & Son £3,472 2 3

North Town Council School—
*Maddock, Son & Sharpe 871 0 0

Walsall.—Supply of steelwork for platform to carry shops to be erected at the Railway Station and Park-street, for the L.M. & S. Rly. Mr. A. Newlands, Chief Engineer, Euston Station, N.W.1:—

*Patent Shaft & Axle Co., Ltd., Wednesbury.

Wanstead.—House, for Mrs. Mundy, in Blakehall-road. Messrs. Welch, Cachemaille-Day & Lander, architects, 7, New-square, Lincoln's Inn, W.C.2:—

E. A. Roome & Co., Ltd.	£3,597 0
Henry Knight & Son	2,833 0
Chessums, Ltd.	2,410 0
Johns Bros. (Woolwich), Ltd.	2,362 2
J. T. Luton & Son, Ltd.	2,298 0
Haines & Warwick, Ltd.	2,260 0

Warrington.—Reconstruction of works in Norman-street, for the Alliance Box Co., Ltd., Alliance Works, Orford-lane. Messrs. Wright & Hamlyn, architects, Patten-chambers, Winmarleigh-street:—

*H. Fairclough, Howley, Warrington.

Watford.—Sewer in Bushey Mill-lane to Garston for the T.C.:—

*David Thomson & Sons, Ltd. £20,911 15 7

Wath-upon-Dearne.—Extensions to public baths, for the U.D.C. Mr. H. Cranage, engineer and surveyor. Quantities by the engineer:—

*E. Brown & Son, Wath-upon-Dearne £1,085 10

Wath-upon-Dearne.—Painting and decorating at hospital buildings, for the Wath, Swinton and District Joint Hospital Board:—

*L. Smith, West Melton, near Rotherham.

Wednesbury.—16 non-parlour type houses on the Meaty Croft site, for the T.C. Mr. Arthur Booth, L.R.I.B.A., Borough Engineer and Surveyor:—

*Housing, Ltd., Blackheath, Birmingham £4,690 4

Weymouth and Melcombe Regis.—Extensions to existing convenience at entrance to Corporation-yard, Westham Embankment Bridge, for the T.C. Mr. R. W. Vine, Borough Engineer and Surveyor:—

*A. & G. Blackwell, Swindon.

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Wellingborough.—138 houses on the Roberts-street estate, for the U.D.C. Mr. R. Stevenson Henshaw, Engineer and Surveyor:—

A. E. Guest, Ltd., Warlingham	£49,854	2	11
G. Hotter & Son, Billingborough	49,671	14	8
Childs & Co., Finedon	49,586	0	0
Heels & Sugars Luton	49,090	0	0
R. Marriott, Rushden	48,988	0	0
W. Thompson & Son, Irthlingborough	47,769	0	0
C. Adams & Co., Wellingborough	47,704	0	0
A. F. Keach, Burton Latimer	46,973	10	0
Gerrard & Son, Swinton	46,778	0	0
Bennett Bros., Letchworth	46,518	0	0
J. Jones, Coventry	46,386	0	0
W. J. Simms & Co., Nottingham	46,056	0	0
G. F. Sharman, Northampton	45,447	0	0
Underwood & Co., Northampton	45,331	0	0
V. G. Selwood & Co., Chelmsford	45,240	0	0
Corolite Construction, Ltd., London	45,076	0	0
Bainbridge & Co., Doncaster	44,597	0	0
A. P. Lewis & Son, Burton Latimer	44,114	0	0
J. Hobson & Son, Nottingham	43,790	0	0
H. E. Pitt, Ltd., Sunderland	43,106	9	0
Pearson & Blackwell, Doncaster	41,149	3	0
F. Garner & Son, Leicester	40,916	14	4
C. Sansom, Swansea	39,270	0	0
*Sabin & Young, Doncaster and Walsall	38,906	2	0
(Part of complete contract only.)			
W. E. Cockerill & Son, Northampton	6,000	0	0
Hacksley Bros, Wellingborough	14,308	0	0
Stevens & Co., Wellingborough	9,380	0	0

West Ham.—Entrance lodge and gates at the institution at South Ockendon, for the T.C.:—

S. J. Davis, Romford	£1,195
H. C. Horswill, Ltd., Forest Gate	1,199
A. E. Smyes, Ltd., Stratford	1,278
*W. E. Walsham, Ltd., Grays	1,187
H. W. Wilson, Ltd., South Ockendon	1,230
Works Manager, Stratford	1,240

Whickham (Co. Durham).—Reconstruction of the gasworks bridge at Dunston-on-Tyne, for the Joint Councils of Gateshead and Whickham. Mr. F. H. Patterson, Gateshead Borough Engineer:—

*Purdie, Lumsden & Co., Newcastle... £18,471

Winterton.—16 houses, on Roxby-road site, for the U.D.C. Mr. A. M. Cobban, architect, Doncaster-road, Scunthorpe:—

H. L. Clayton, Scunthorpe	£5,151
F. J. Brown, Scunthorpe	5,112
Barrick & Jones, Benton Stather	5,041
J. Butler, Broughton	5,014
Metcalf Bros., Doncaster	4,960
†Gilding & Hill, Winterton	4,880
†G. Bray, Winterton	4,864
J. Spavin, Scunthorpe	4,610
(Architect's estimate, £4,885.)	

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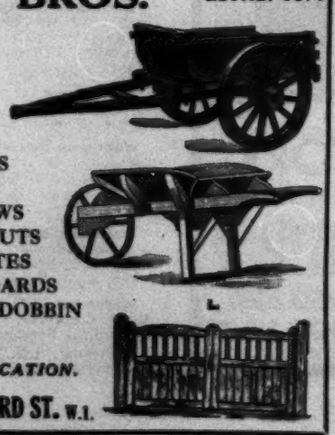

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